



ZXHN H1600

Home Gateway

# Maintenance Management Guide

---

Version:V1.0

ZTE CORPORATION

No. 55, Hi-tech Road South, ShenZhen, P.R.China

Postcode: 518057

Tel: +86-755-26771900

URL: <http://support.zte.com.cn>

E-mail: [support@zte.com.cn](mailto:support@zte.com.cn)

## **LEGAL INFORMATION**

Copyright 2021 ZTE CORPORATION.

The contents of this document are protected by copyright laws and international treaties. Any reproduction or distribution of this document or any portion of this document, in any form by any means, without the prior written consent of ZTE CORPORATION is prohibited. Additionally, the contents of this document are protected by contractual confidentiality obligations.

All company, brand and product names are trade or service marks, or registered trade or service marks, of ZTE CORPORATION or of their respective owners.

This document is provided as is, and all express, implied, or statutory warranties, representations or conditions are disclaimed, including without limitation any implied warranty of merchantability, fitness for a particular purpose, title or non-infringement. ZTE CORPORATION and its licensors shall not be liable for damages resulting from the use of or reliance on the information contained herein.

ZTE CORPORATION or its licensors may have current or pending intellectual property rights or applications covering the subject matter of this document. Except as expressly provided in any written license between ZTE CORPORATION and its licensee, the user of this document shall not acquire any license to the subject matter herein.

ZTE CORPORATION reserves the right to upgrade or make technical change to this product without further notice.

Users may visit the ZTE technical support website <http://support.zte.com.cn> to inquire for related information.

The ultimate right to interpret this product resides in ZTE CORPORATION.

### **Statement on the Use of Third-Party Embedded Software:**

If third-party embedded software such as Oracle, Sybase/SAP, Veritas, Microsoft, Vmware, and Redhat is delivered together with this product of ZTE, the embedded software must be used as only a component of this product. If this product is discarded, the licenses for the embedded software must be void either and must not be transferred. ZTE will provide technical support for the embedded software of this product.

## **Revision History**

<b>Revision No.</b>	<b>Revision Date</b>	<b>Revision Reason</b>
R1.0	2021-03-04	First edition

Serial Number: SJ-20200218145027-006

Publishing Date: 2021-03-04(R1.0)

# Contents

---

<b>1 Safety Precautions.....</b>	<b>1-1</b>
<b>2 Product Overview.....</b>	<b>2-1</b>
2.1 Package Check.....	2-2
2.2 Product Specifications.....	2-2
2.3 Hardware Description.....	2-3
2.4 Hardware Connection.....	2-9
<b>3 Configuration Preparation.....</b>	<b>3-1</b>
3.1 Configure TCP/IP.....	3-1
3.2 Login.....	3-2
<b>4 Topology.....</b>	<b>4-1</b>
<b>5 Configure the Internet.....</b>	<b>5-1</b>
5.1 Check the Status.....	5-1
5.1.1 Check the DSL Link Status.....	5-1
5.1.2 Check the DSL Connection Status.....	5-2
5.1.3 Check the Ethernet Interface Information.....	5-3
5.1.4 Check the Ethernet Connection Status.....	5-3
5.1.5 Check the 3G Status.....	5-4
5.2 Configure the WAN.....	5-5
5.2.1 Configure the DSL Connection.....	5-5
5.2.2 Configure the Ethernet Connection.....	5-10
5.2.3 Configure the 3G.....	5-13
5.3 Configure the QoS.....	5-17
5.3.1 Configure the QoS Global Parameters.....	5-17
5.3.2 Configure the QoS Classification.....	5-17
5.3.3 Configure the QoS Congestion Management.....	5-19
5.3.4 Configure the QoS Traffic Shaping.....	5-21
5.4 Configure the Security.....	5-22
5.4.1 Configure the Firewall Level.....	5-22
5.4.2 Configure the Filter Criteria.....	5-23
5.4.3 Configure the Local Service Control.....	5-26
5.4.4 Configure the ALG.....	5-29
5.4.5 Configure the DMZ.....	5-30
5.4.6 Configure the Port Forwarding.....	5-31

5.5 Configure the Parental Controls.....	5-32
5.6 Configure the DDNS.....	5-34
5.7 Configure the SNTP.....	5-35
5.8 Configure the Port Binding.....	5-36
5.9 Configure the Multicast.....	5-36
5.9.1 Configure the IGMP.....	5-36
5.9.2 Configure the MLD.....	5-37
<b>6 Configure the Local Network.....</b>	<b>6-1</b>
6.1 Check the Local Network Status.....	6-1
6.2 Configure the WLAN.....	6-2
6.2.1 Configure the Basic Parameters of the WLAN.....	6-2
6.2.2 Configure the Advanced Parameters of the WLAN.....	6-5
6.3 Configure the LAN.....	6-7
6.3.1 Configure the LAN(IPv4).....	6-7
6.3.2 Configure the LAN(IPv6).....	6-10
6.4 Configure the Route.....	6-15
6.4.1 Configure the Routing(IPv4).....	6-15
6.4.2 Configure the Routing(IPv6).....	6-17
6.5 Configure the FTP.....	6-20
6.6 Configure the UPnP.....	6-21
6.7 Configure the DMS/DLNA.....	6-21
6.8 Configure the Samba Service.....	6-22
6.9 Configure the DNS.....	6-23
6.10 Configure the Device Role.....	6-24
<b>7 Configure the VoIP.....</b>	<b>7-1</b>
7.1 Check the Status of VoIP.....	7-1
7.2 Configure the SIP Accounts.....	7-2
7.3 Configure the Advanced Parameters.....	7-2
7.4 Configure the SIP Protocol.....	7-4
7.5 Configure the Media.....	7-5
7.6 Configure the Fax.....	7-6
<b>8 Configure the Management and Diagnosis.....</b>	<b>8-1</b>
8.1 Configure the Account Management.....	8-1
8.2 Configure the Login Timeout.....	8-3
8.3 Configure the System Management.....	8-3
8.3.1 Configure the Device Management.....	8-3
8.3.2 Upgrade Software.....	8-4

8.3.3 Manage the User Configuration.....	8-5
8.4 Configure the Mirror function.....	8-6
8.5 Configure the TR069 function.....	8-7
8.6 Manage the Log.....	8-9
8.7 Diagnosis.....	8-12
8.8 Check the ARP Table.....	8-14
8.9 Check the MAC Table.....	8-14
8.10 Configure the IPv6 Switch.....	8-15
<b>9 Troubleshooting.....</b>	<b>9-1</b>

# Chapter 1

## Safety Precautions

---



Before using the device, read the following safety precautions. ZTE bears no liability to the consequences incurred by violation of the safety instructions.

---

### Usage Cautions

- Read all the safety cautions carefully before using the device.
- Only use the accessories included in the package, such as power supply adapter.
- Do not extend the power cord, otherwise the device will not work.
- The power supply voltage must meet the requirements of the device input voltage (The voltage fluctuation range is less than 10%).
- Keep the power plug clean and dry to prevent any risk of electric shock or other dangers.
- Disconnect all the cables during a lightning storm to prevent the device from damage.
- Power off and unplug the power plug when the device is not in use for a long time.
- Do not attempt to open the covers of the device. It is dangerous to do so when the device is powered on.
- Power off and stop using the device under the conditions such as, abnormal sound, smoke, and strange smell. Contact the service provider for maintenance if the device is faulty.

### Environment Requirements

- Ensure proper ventilation to the device. Place the device away from direct sunlight.
- Keep the device ventilated and dry. Never spill any liquid on the device.
- Do not place any object on the device to prevent any deformation or damage to the device.
- Do not place the device near any source of heat or water.

- Keep the device away from any household appliances with strong magnetic or electric fields, such as microwave oven and refrigerator.

### **Cleaning Requirements**

- Before cleaning, power off the device, and unplug all the cables connected to the device, such as power cable, optical fiber, and Ethernet cable.
- Do not use any liquid or spray to clean the device. Use a soft dry cloth.

### **Environment Protection**

- Do not dispose the device or battery improperly.
- Observe the local regulations about the equipment disposal or treatment.

### **Restrictions in the 5 GHz Band**

According to Article 10(10) of Directive 2014/53/EU, the packaging shows that this radio equipment will be subject to some restrictions when placed on the market in Belgium(BE), Bulgaria(BG), the Czech Republic(CZ), Denmark(DK), Germany(DE), Estonia(EE), Ireland(IE), Greece(EL), Spain(ES), France(FR), Croatia(HR), Italy(IT), Cyprus(CY), Latvia(LV), Lithuania(LT), Luxembourg(LU), Hungary(HU), Malta(MT), Netherlands(NL), Austria(AT), Poland(PL), Portugal(PT), Romania(RO), Slovenia(SI), Slovakia(SK), Finland(FI), Sweden(SE), Turkey(TR), Norway(NO), Switzerland(CH), Iceland(IS), and Liechtenstein(LI).

The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

### **RF Exposure Information**

The Maximum Permissible Exposure (MPE) level is calculated based on a distance of  $d=20$  cm between the device and the human body. To maintain compliance with the RF exposure requirement, a separation distance of 20 cm between the device and the human should be maintained.

### **EU Declaration of Conformity**

Hereby, ZTE Corporation declares that the radio equipment type ZXHN H1600 is in compliance with Directive 2014/53/EU, The full text of the EU declaration of conformity is available at the following Internet address:

<http://support.zte.com.cn/support/cer/EU>

### Environmental Information

The equipment you purchased has required the extraction and use of natural resources for its production. It may contain substances that are hazardous to people's health and to the environment. To avoid putting such substances into our environment and to reduce pressure on our natural resources, we ask that you reuse or recycle your end-of-life equipment by using an accredited electronics take-back system.

The symbols below indicate that this product should be reused or recycled and not simply discarded. Please locate and use an appropriate reuse and recycling site.

If you need more information on collection, reuse and recycling systems, contact your local or regional waste administration. You may also contact your equipment provider for more information on the environmental performances of these products.





# Chapter 2

## Product Overview

---

### Table of Contents

Package Check.....	2-2
Product Specifications.....	2-2
Hardware Description.....	2-3
Hardware Connection.....	2-9

The ZXHN H1600 is an advanced home gateway that supports Dual-band concurrent 11 ac Wi-Fi. It provides High Speed Internet, IPTV services through the GE uplink. Those services are delivered by the gateway on your home network to the PCs, STBs, gaming devices and so on via the integrated interfaces: Ethernet, Wi-Fi.

It supports the following features:

- Gigabit Ethernet WAN Uplink

The ZXHN H1600 can provide Internet access through Gigabit Ethernet WAN connection. So it is possible for ZXHN H1600 to provide Internet access choices to suit various broadband access network.

- GE LAN Ports

The ZXHN H1600 is equipped with 2 Gigabit Ethernet LAN interfaces which provides higher bandwidth and speed for networking and makes the device more future-proof.

- Dual Band Concurrent Wi-Fi

The ZXHN H1600 supports Dual-Band concurrent Wi-Fi up to 300Mbps(802.11n 2x2 @ 2.4GHz) and 1.7Gbps(802.11ac 4x4&nbsp;@5GHz). Wi-Fi is a key feature for the end users to build up a home network without any cabling in the house or in the office.

- IPv4 / IPv6 Dual Stack

The ZXHN H1600 supports IPv4 / IPv6 dual stack mechanism for IPv6 network migration.

- Remote management

The ZXHN H1600 supports TR-069, including TR-098 data model. It is convenient for operators to facilitate the large-scale deployment and maintenance by zero-touch provisioning.

## 2.1 Package Check

Please ensure the ZXHN H1600 package contains the following items.

Name	Quantity
ZXHN H1600	1
Power Adapter	1
RJ-45 Ethernet Cable	1
RJ-11 Telephone Cable	2
User Manual	1



### Note

The list is only for reference. The actual contents may vary from the list.

If any of the items included in the package is incorrect, lost or damaged, please contact your service provider. If you need to replace the product, please keep the package and all the items in good condition.

## 2.2 Product Specifications

Table 2-1 describes the product specification of the ZXHN H1600.

**Table 2-1 Product Specification**

Technical Specifications	
Dimensions	226 mm (H) × 32 mm (D) × 156 mm (W)
Power adapter	Input: AC 100 V – 240 V, 50 Hz/60 Hz
	Output: DC 12.0 V, 2.0 A
Environment Requirements	
Operation temperature	0 °C to 40 °C (32 °F to 104 °F)
Storage temperature	–40 °C to 70 °C (–40 °F to 158 °F )
Operation humidity/ Storage humidity	5% – 95% (non-condensing)
Wi-Fi Radio Specifications	
Radio Frequencies	Maximum Output Power
Wi-Fi 2.4 GHz band: 2400 MHz–2483.5 MHz	EIRP: 20 dBm

Wi-Fi 5 GHz band: 5150 MHz–5250 MHz	EIRP: 23 dBm
Wi-Fi 5 GHz band: 5250 MHz–5350 MHz	EIRP: 23 dBm
Wi-Fi 5 GHz band: 5470 MHz–5725 MHz	EIRP: 30 dBm

## 2.3 Hardware Description

### Front Panel

Figure 2-1 shows the indicators on the front panel of the ZXHN H1600

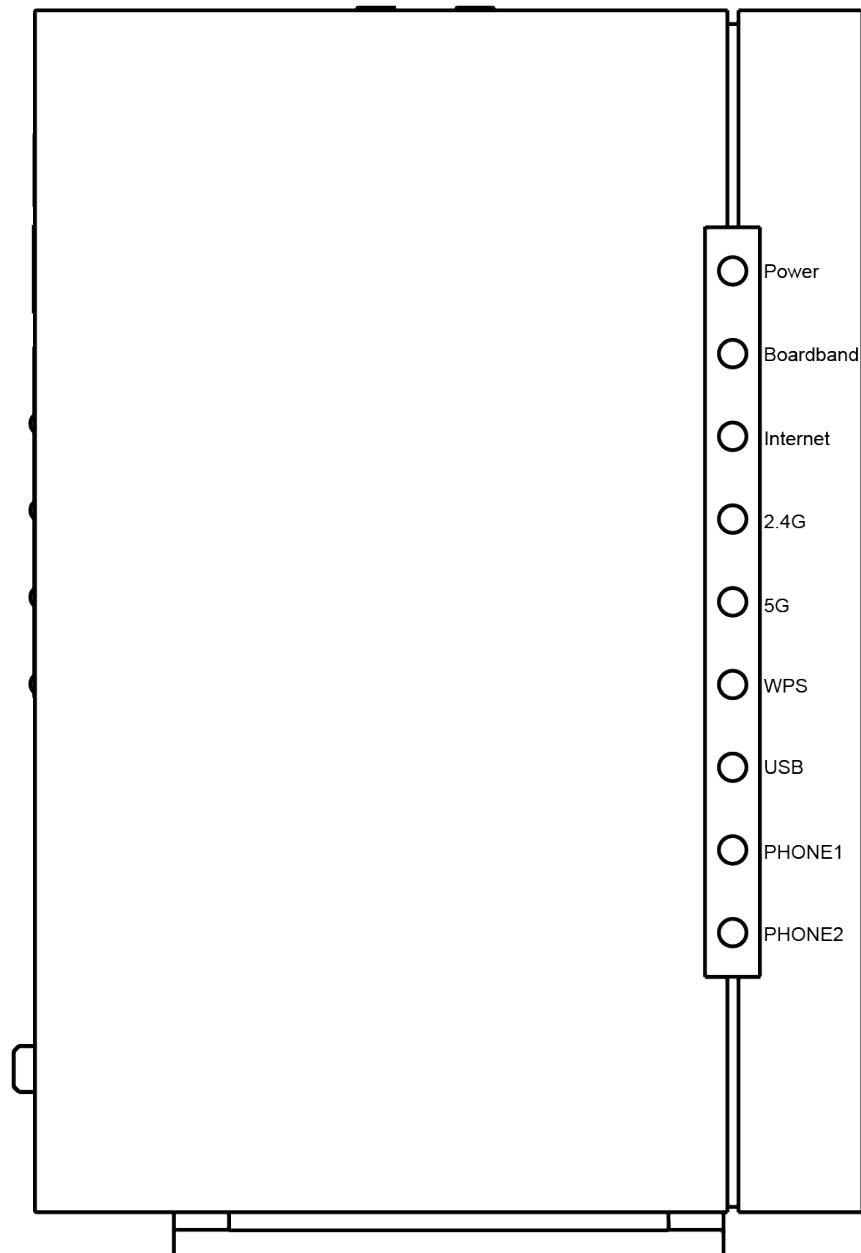
**Figure 2-1 The Front Panel**

Table 2-2 describes the indicators on the front panel of the ZXHN H1600 unit.

**Table 2-2 Descriptions of Indicators**

LED Indicator	Status	Description
Power	Off	The device is powered off.
	Solid green	The device is powered on properly.
	Solid red	The device is performing self-detection or the self-detection fails.

LED Indicator	Status	Description
Broadband (DSL)	Off	The DSL connection has not been established.
	Solid green	DSL synchronization is normal and the link Connection is normal.
	Flashing slowly green	Physical link exists, however carrier wave has not been detected.
	Flashing fast green	The device is in the handshaking process to establish the link connection.
Broadband (WAN)	Off	The equipment is not powered on or the WAN port is disabled.
	Solid green	The Ethernet connection has been established.
Internet	Off	The gateway is switched off.
	Solid green	The WAN connection is online. The device has a WAN IP address from IPCP, DHCP or statically configured. LED remains green in the case of disconnection due to idle timeout when PPP dial-on-demand is enabled. Green LED indicates that the routing connection state is up.
	Solid red	The WAN connection is dialing up or fails to get online. Device attempted to become IP connected and failed ( no DHCP response, no PPPoE response, PPP authentication failed, no IP address from IPCP, etc).
	Flashing green	The Internet connection has been established and the data is being transmitted or received.
2.4G	Off	WLAN RF switch is off.
	Solid green	WLAN RF switch is on.
	Flashing green	WLAN RF switch is on and the data is being transmitted or received, and the flashing frequency indicates Wi-Fi network traffic.
5G	Off	WLAN RF switch is off.
	Solid green	WLAN RF switch is on.
	Flashing green	WLAN RF switch is on and the data is being transmitted or received, and the flashing frequency indicates Wi-Fi network traffic.
WPS	Off	No WPS access or the WPS access of the terminal exceeds 5 minutes.

LED Indicator	Status	Description
	Solid green	WPS access is successful. This solid-on light will be automatically off after 5 minutes.
	Flashing slowly green	WLAN terminal is in WPS accessing process.
	Flashing fast green	The WPS accessing of the WLAN terminal is faulty.
USB	Off	The device is powered off or the USB interface is not connected.
	Solid green	The USB interface is connected with USB device.
	Flashing green	Data is being transmitted or received via the USB interface.
PHONE1 PHONE2	Off	The device has not been registered to the VOIP network.
	Solid green	The device has registered to the VOIP network.
	Flashing green	The associated telephone is off-hook.
LAN1\LAN2\ LAN3\LAN4	Off	The LAN connection has not been established.
	Solid green	The LAN connection has been established.
	Flashing green	Data transmission is in processing, The indicator flashes according to the LAN traffic.

- The LAN1\LAN2\LAN3\LAN4 status indicator is on the LAN1\LAN2\LAN3\LAN4 port of the ZXHN H1600.

### Top Panel

Figure 2-2 shows the buttons on the top panel of the ZXHN H1600.

**Figure 2-2 The Top Panel**

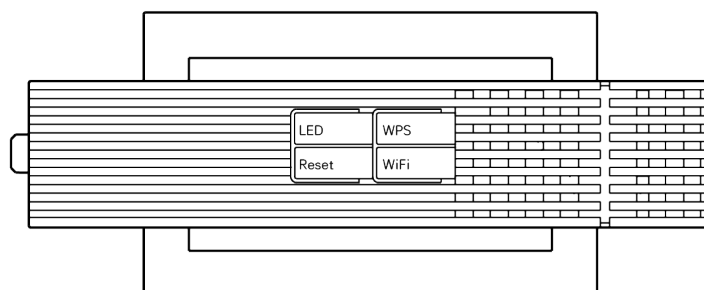


Table 2-3 describes the buttons on the top panel of the ZXHN H1600.

**Table 2-3 Descriptions of the Top Panel**

Button	Function
Reset	Reset push button. During power on period, press this button for more than 5 seconds to reset the current settings to the factory default.
LED	LED control button: Press the button to turn off all the indicators on the panel. To turn on the indicators, press the button again.
WPS	WPS Push Button, press this button to enable or disable the WPS function.
WiFi	Wi-Fi dual-interfaces on/off button.

**Side Panel**

Figure 2-3 shows the buttons on the side panel of the ZXHN H1600.

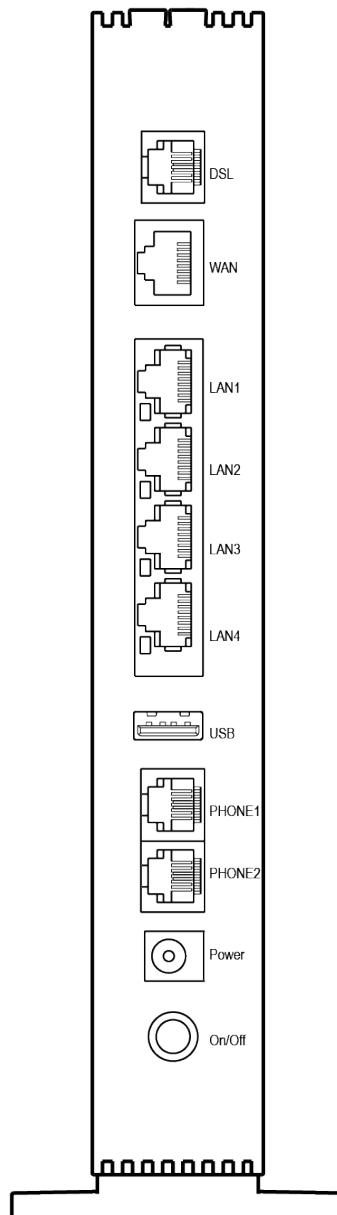
**Figure 2-3 The Side Panel**

Table 2-4 describes the interfaces and buttons on the side panel of the ZXHN H1600.

**Table 2-4 Descriptions of the Side Panel**

Interface/Button	Function
DSL	RJ-11 port. It is used to connect to the ADSL, VDSL or VDSL uplink access network.
WAN	RJ-45 port. It is used to connect to the uplink Ethernet access network.
LAN1\LAN2\ LAN3\LAN4	RJ-45 port. It is used to connect the modem to computer, STBs or other network devices.

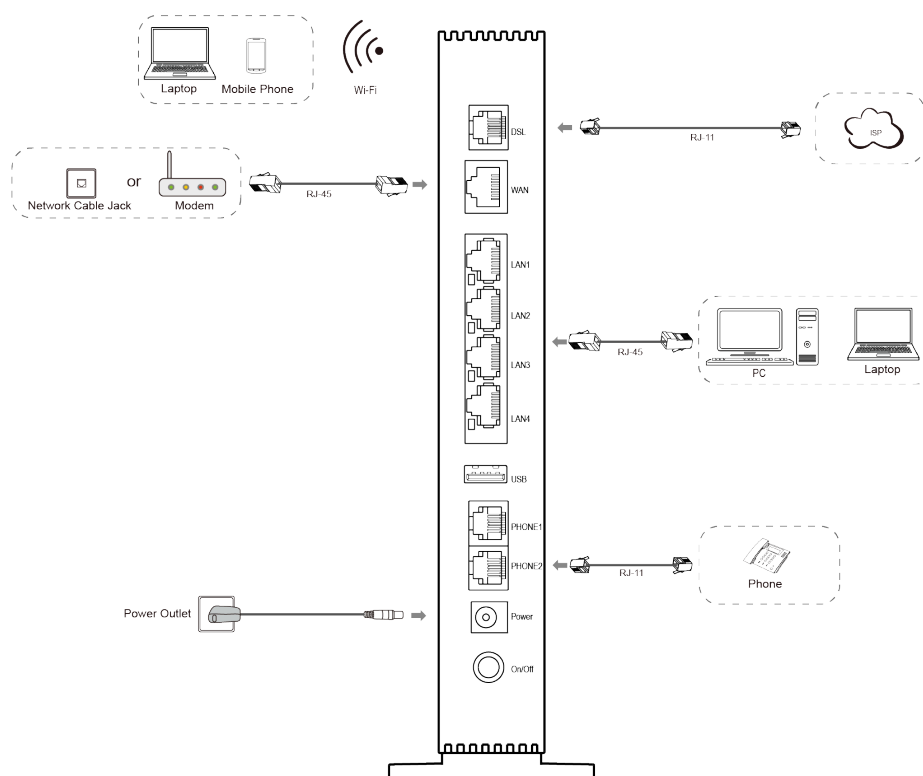


Interface/Button	Function
USB	Standard USB 2.0 interface, connected to a USB storage device, printer or 3GDongle connection.
PHONE1 PHONE2	RJ-11 port. It is used to connect to the phone through the telephone line.
Power	Power supply port. It is connected to the power adapter.
On/Off	Power switch. Power on or power off the device.

## 2.4 Hardware Connection

Figure 2-4 shows the devices that are connected to interfaces of the ZXHN H1600

**Figure 2-4 Cable Connection**



After the devices are connected to the ZXHN H1600 device, press the power button. When the corresponding indicators on the front panel are On, you can enjoy various services provided by the service provider.

The factors affecting the wireless network coverage range include the location of the product, distance between the product and a wireless terminal, number of obstacles, obstacle material and density, and interference source. It is recommended that you place

the product in accordance with the following principles to maximize the strength of wireless signals.

- The product should be far away from the objects affecting wireless signal propagation, for example, an object with a high reflectivity such as a metallic object or a mirror.
- The product should be far away from an electrical appliance with a strong magnetic or electric field, for example, a microwave oven, a refrigerator, a wireless router, a cordless phone, or a Bluetooth product.
- The product should be installed on the same floor as the applied area.
- Do not put other objects on the product. Try to reduce the number of obstacles between the product and a wireless terminal.
- Horizontally place the product in the middle of the applied area and do not put it in a corner.
- Do not place the product at a high position while it is placed horizontally. The recommended height is 1.2 to 1.5 meters.

# Chapter 3

## Configuration Preparation

---

### Table of Contents

Configure TCP/IP.....	3-1
Login.....	3-2

This manual uses the Windows operating system as an example for describing how to configure the ZXHN H1600. Before configuring the ZXHN H1600, you need to perform the following operations:

- Ensure that a crossover or straight-through Ethernet cable connects a computer to the device.
- Ensure that the TCP/IP configuration on the computer is correct.
- Stop any firewall or other security software operating on the computer.
- Disable the proxy setting of Internet Explorer.

### 3.1 Configure TCP/IP

To log in to the ZXHN H1600 on a computer, you need to set the IP address of the computer to ensure that the IP address of the computer and the maintenance IP address of the ZXHN H1600 are in the same network segment.

#### Context

The default maintenance IP address of the ZXHN H1600 is as follows:

- IP address: 192.168.1.1
- Subnet mask: 255.255.255.0
- Default gateway: 192.168.1.1

#### Steps

1. Use an Ethernet cable to connect a local computer to the LAN interface of the ZXHN H1600.
2. On the local computer, double-click **Local Area Connection** and click **Properties**.  
The **Local Area Connection Properties** dialog box is displayed.

3. Double-click **Internet Protocol (TCP/IP)**. The **Internet Protocol (TCP/IP) Properties** dialog box is displayed. Set the IP address to *192.168.1.200*, subnet mask to *255.255.255.0*, and default gateway to *192.168.1.1*.
4. Click **OK**.

#### Postrequisite

After the IP address of the computer is set, you can run the **Ping** command to ping the IP address 192.168.1.1. If the ping operation is successful, it indicates that the TCP/IP configuration is correct and the computer is properly connected to the ZXHN H1600.

## 3.2 Login

The ZXHN H1600 provides a Web-based configuration and management system. You can enter a specified IP address in the address bar of Internet explorer to access the system.

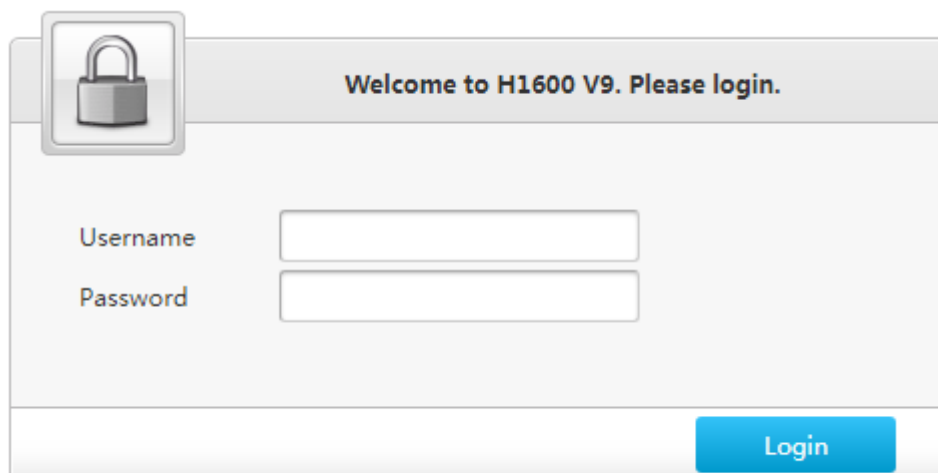
#### Prerequisite

A computer is directly connected to the LAN port of ZXHN H1600, and their IP addresses are in the same network segment.

#### Steps

1. Open Internet explorer, and enter *http://192.168.1.1* (default maintenance IP address of the ZXHN H1600) in the address field. Press the **Enter** key. The login page is displayed, see [Figure 3-1](#).

Figure 3-1 Login Page



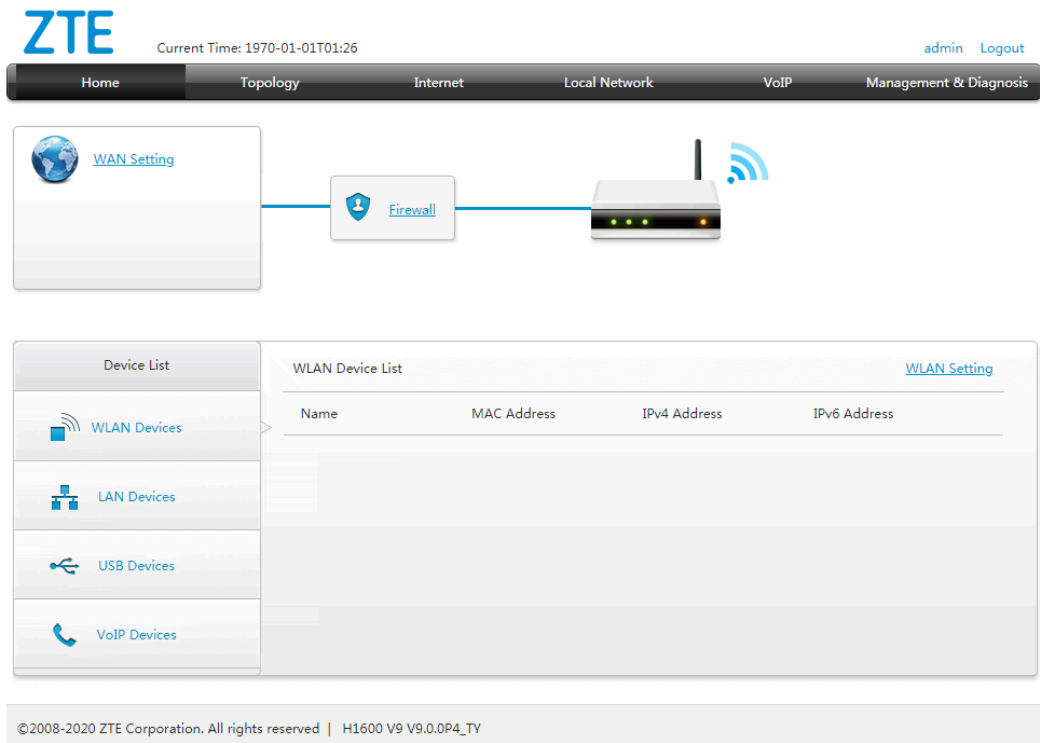
Username

Password

Login

2. Enter your username and password and click **Login**. The configuration page is displayed, see [Figure 3-2](#).

Figure 3-2 Configuration Page



3. Check the device Information. select **Management & Diagnosis > Status**. The page indicates whether the hardware version and software version are correct, see [Figure 3-3](#). Click **Refresh** to get the latest information.

Figure 3-3 Device Information Page



# Chapter 4

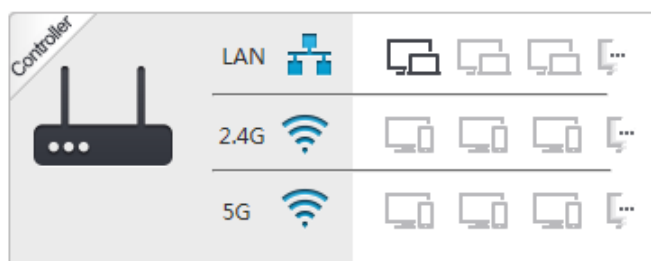
## Topology

---

In the controller status and agent status, the corresponding topologies are different.

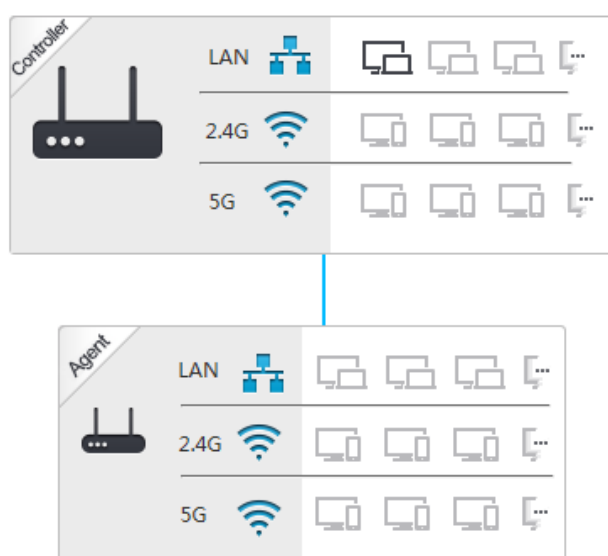
- If ZXHN H1600 is set to controller status, the corresponding topology diagram is shown in [Figure 4-1](#).

**Figure 4-1 Controller Status**



- If ZXHN H1600 is set to agent status, the corresponding topology diagram is shown in [Figure 4-2](#).

**Figure 4-2 Agent Status**



# Chapter 5

## Configure the Internet

---

### Table of Contents

Check the Status.....	5-1
Configure the WAN.....	5-5
Configure the QoS.....	5-17
Configure the Security.....	5-22
Configure the Parental Controls.....	5-32
Configure the DDNS.....	5-34
Configure the SNTP.....	5-35
Configure the Port Binding.....	5-36
Configure the Multicast.....	5-36

## 5.1 Check the Status

### 5.1.1 Check the DSL Link Status

#### Abstract

The section describes how to check the DSL link status.

#### Steps

1. On the main page of the ZXHN H1600, select **Internet > Status > DSL** to the **DSL Link Information** page, see [Figure 5-1](#).

**Figure 5-1 DSL Link Information**

## ▼ DSL Link Information

Link Status	No Link
Modulation Type	N/A
Actual Rate(Up/Down)	0/0 kbps
Attainable Rate(Up/Down)	0/0 kbps
Noise Margin(Up/Down)	0/0 dB
Line Attenuation(Up/Down)	0/0 dB
Output Power(Up/Down)	0/0 dBm
Data Path(Up/Down)	N/A
Interleave Depth(Up/Down)	0/0
Interleave Delay(Up/Down)	0/0 ms
INP(Up/Down)	0/0 symbols
Profile	N/A
Showtime Start	0 h 0 min 0 s
LinkEncap	N/A
CRC Errors(Up/Down)	0/0
FEC Errors(Up/Down)	0/0

[Refresh](#)

2. Click **Refresh** to refresh the information.

## 5.1.2 Check the DSL Connection Status

### Abstract

The section describes how to check the DSL connection status.

### Steps

1. On the main page of the ZXHN H1600, select **Internet > Status > DSL** to the **DSL Connection Status** page, see [Figure 5-2](#).



**Figure 5-2 DSL Connection Status**

## ▼ DSL Connection Status

Connection Name	For writing document
Type	Static
DSL Transfer Mode	PTM
IP Version	IPv4
NAT	On
IP Address	10.46.56.95/255.255.255.192
DNS	10.46.56.246/10.1.30.10/0.0.0.0
IPv4 Gateway	10.46.56.65
IPv4 Connection Status	Connected
Disconnect Reason	None
WAN MAC	00:19:c5:50:04:14

[Refresh](#)

2. Click **Refresh** to refresh the information.

### 5.1.3 Check the Ethernet Interface Information

The section describes how to check the Ethernet interface status.

**Steps**

1. On the main page of the ZXHN H1600, select **Internet > Status > Ethernet Interface Information** to the **Ethernet Interface Information** page, see [Figure 5-3](#).

**Figure 5-3 Ethernet Interface Information**

## ▼ Ethernet Interface Information

Interface Name	WAN
MAC Address	c0:fd:84:ff:f2:4f
Status	No Link
Packets Received/Bytes Received	0/0
Packets Sent/Bytes Sent	0/0

[Refresh](#)

2. Click **Refresh** to refresh the information.

### 5.1.4 Check the Ethernet Connection Status

The section describes how to check the Ethernet connection status.

### Steps

1. On the main page of the ZXHN H1600, select **Internet > Status > Ethernet Connection Information** to the **Ethernet Connection Information** page, see [Figure 5-4](#).

**Figure 5-4 Ethernet Connection Information**

#### ▼ Ethernet Connection Status

Connection Name	DHCP
Type	DHCP
IP Version	IPv4
NAT	On
IP Address	0.0.0.0/0.0.0.0
DNS	0.0.0.0/0.0.0.0/0.0.0.0
IPv4 Gateway	0.0.0.0
Remaining Lease	0 h 0 min 0 s
IPv4 Connection Status	Disconnected <a href="#">Renew</a>   <a href="#">Release</a>
IPv4 Online Duration	0 h 0 min 0 s
Disconnect Reason	No Carrier
WAN MAC	d4:b7:09:bf:ef:ec

[Refresh](#)

2. Click **Refresh** to refresh the information.

## 5.1.5 Check the 3G Status

### Abstract

The section describes the 3G status.


### Steps

#### Check the Mobile Network Information

1. On the main page of the ZXHN H1600, select **Internet > Status > 3G > Mobile Network** to go to the **Mobile Network** page. The signal strength can verify the network card is plugged, see [Figure 5-5](#).

Figure 5-5 Mobile Network

## ▼ Mobile Network

Signal Strength	
Service Provider(MCC/MNC)	CHN-CUGSM
Network Mode	UMTS
IMEI	359538030656884

[Refresh](#)

2. Click **Refresh** to refresh the information.

**Check the 3G Connection Status**

1. On the main page of the ZXHN H1600, select **Internet > Status > 3G > 3G Connection Status** to go to the **3G Connection Status** page, see [Figure 5-6](#).

Figure 5-6 3G Connection Status

Connection Name	3G
PDP Type	IP
APN	3gnet
Dial Number	*99#
NAT	On
IP Address	10.13.241.4/255.255.255.255
DNS	58.240.57.33/221.64.66/0.0.0.0
IPv4 Connection Status	Connected
Disconnect Reason	None
IPv4 Online Duration	0 h 2 min 51 s

[Refresh](#)

2. Click **Refresh** to refresh the information.

## 5.2 Configure the WAN

### 5.2.1 Configure the DSL Connection

**Abstract**

This procedure describes how to configure the [DSL](#) on the network side, so that user services can be connected to the external network.

The ZXHN H1600 supports Route-based and Bridge-based WAN connections.

- Routing connection
- Bridge-based connection

## Steps

### Configure the DSL Connection

1. On the main page of the ZXHN H1600, select **Internet > WAN > DSL** to the **DSL Connection** page, see [Figure 5-7](#).

**Figure 5-7 DSL Connection page**

#### ▼ DSL Connection

[What should be noticed when configuring DSL connection?](#)

**New Item** Detail

Connection Name

DSL Transfer Mode ATM

**ATM Parameters**

VPI/VCI  /

Service Type UBR

Type Routing

Service List ☒ INTERNET ☒ TR069 ☒ VoIP ☒ IPTV

MTU

Link Type PPP

PPP Transfer Type PPPoE

**PPP**

Username

Password

IP Version IPv4

VLAN ☐ On ☒ Off

Apply Cancel

+ Create New Item

[Table 5-1](#) lists the new item parameters.

**Table 5-1 Parameter Descriptions for the DSL**

Parameter	Description
Connection Name	Name of the connection.
DSL Transfer Mode	There are two xDSL transfer modes: ATM, PTM.
VPI/VCI	If xDSL Transfer ModeEnter is selected to be ATM, the VPI/VCI values provided by the ISP needs to be configured. VPI Range: 0 - 255

Parameter	Description
	VCI Range: 0 - 65535
Service Type	If xDSL Transfer ModeEnter is selected to be ATM, Service Type needs to be configured. ATM QoS used to limit the transmission of uplink traffic. The options are: UBR, CBR, VBR-nrt, and VBR-rt.
PCR	If Service Type is selected to be CBR,VBR-rt or VBR-nrt, PCR needs to be configured.
SCR	Sustainable Cell Rate. If Service Type is selected to be VBR-rt or VBR-nrt, SCR needs to be configured.
MBS	Maximum Burst Size. If Service Type is selected to be VBR-rt or VBR-nrt, MBS needs to be configured.
Type	The connection type includes Routing and Bridge Connection. In this case, Routing is selected.
Service List	Options: INTERNET, TR069, IPTV. This parameter must be consistent with service configuration. For example, if <b>INTERNET</b> is selected, it indicates that the WAN connection supports the Internet access service only. If <b>TR069</b> is selected, it indicates that the WAN connection supports remote management.
MTU	Define the maximum transfer unit. In this case, default value is 1492.
Link Type	There are two link types: PPP and IP.
PPP Transfer Type	In this case, default value is PPPoE. If xDSL Transfer ModeEnter is selected to be ATM, PPP Transfer Type includes PPPoE and PPPoA.
<b>PPP</b>	
Username/Password	PPPoE user name and password. They are provided by the ISP.
IP Version	The IP version includes: IPv4 and IPv6 IPv4/v6 In this case, IPv4 is selected.
<b>IPv4</b>	
IP Type	By default, it is set to DHCP. Options: <ul style="list-style-type: none"> <li>● DHCP: The DHCP server automatically allocates a dynamic IP address to the device.</li> </ul>

Parameter	Description
	<ul style="list-style-type: none"> <li>● Static: You need to specify a static IP address for the device.</li> <li>● IPoA: It is valid only if the WAN Type parameter is set to DSL.</li> <li>● CLIP: Classical IP over ATM, IP packets to be transferred over ATM mode through packet encapsulation.</li> </ul>
IP Address	IP Address of ZXHN H1600.
Subnet Mask	Subnet mask of ZXHN H1600.
Gateway	It is usually the IP address of the ZXHN H1600 by default.
DNS1-DNS3	IP address of the DNS server for static connections. You can set up to three IP addresses for the server. These IP addresses are provided by the ISP.
<b>IPv6</b>	
IPv6 Info Acquire Mode	<p>Specifies how to acquire IPv6 information for the WAN connection. It is valid only if the WAN connection supports IPv6.</p> <p>The options are:</p> <ul style="list-style-type: none"> <li>● Manual :You need to set the global address, gateway, and DNS acquisition modes.</li> <li>● Auto: The global address, gateway, and DNS acquisition modes are automatically configured.</li> </ul>
Request PD	By default, the On button is selected.
Unnumbered Mode	By default, the On button is not selected. If it is selected, Specifies how to acquire the global IPv6 address.
GUA Allowed From	<p>Specifies how to acquire the global IPv6 address. It is valid only when the IPv6 Info Get Mode parameter is set to be Manual Mode. Options:</p> <ul style="list-style-type: none"> <li>● DHCPv6: The device acquires a global address through DHCPv6. If no option is selected, it indicates that no address acquisition mode is configured.</li> <li>● PD: You need to set a static IPv6 address.</li> <li>● SLAAC: The device generates a global address in accordance with the RA packets from the upper-layer server.</li> </ul>
GUA	Mode of obtaining global address.
PD	Prefix Delegation.
Gateway	It is usually the IPv6 address of the ZXHN H1600 device by default.

Parameter	Description
DNS1-DNS3	IPv6 address of the DNS server for static connections. You can set up to three IPv6 addresses for the server. These IPv6 addresses are provided by the ISP.
Router Solicitation	Make sure the IP address is sole.
VLAN	Specifies whether to carry a VLAN tag in the packets sent over the WAN connection. By default, <b>On</b> button is not selected. If it is selected, a VLAN tag is carried in the packets sent over the WAN connection, and the VLAN ID must be set.
VLAN ID	Identifies a VLAN. Range: 0-4094. To ensure normal service operation, the <b>VLAN ID</b> must be the same as that set in upper-layer MDU/DSLAM configuration.

**Note**

In the ZXHN H1600 provisioning, configure only one Internet-WAN connection and delete other WAN connections.

2. Click **Apply** button to apply the changes.

**Configure the DSL Modulation Parameters**

3. On the main page of the ZXHN H1600, select **Internet > WAN > DSL** to the **DSL Modulation Parameters** page, see [Figure 5-8](#).

**Figure 5-8 DSL Modulation Parameters**

## ▼ DSL Modulation Parameters

**Modulation Type**

☒ ADSL\_G.dmt (G.992.1)
 ☒ ADSL\_G.dmt.bis (G.992.3)

☒ ADSL\_2plus (G.992.5)
 ☒ ADSL\_G.lite (G.992.2)

☒ ADSL\_re-adsl (Annex L)
 ☐ ADSL\_ANSI\_T1.413 (ANSI T1.413)

☒ ADSL\_G.dmt.bis\_AnnexM (G.992.3)
 ☒ ADSL\_2plus\_AnnexM (G.992.5)

☒ VDSL2 (G.993.2)

☒ Profile8a
 ☒ Profile8b

☒ Profile8c
 ☒ Profile8d

☒ Profile12a
 ☒ Profile12b

☒ Profile17a
 ☒ Profile30a

☒ Profile35b

All On | All Off

**Enhance Capability**

☒ Bitswap
 ☒ SRA

☒ G.INP

☒ Vectoring
 ☐ SOS

Apply

Cancel

4. Select the DSL modulation types and click **Apply** button to apply the changes.

**Note**

- Click **All On** to select all DSL modulation types.
- Click **All Off** to cancel all DSL modulation types.
- When you select the Bitswap check box, the system can adjust the modulation bit of an interfered channel to the bit of other channels.

## 5.2.2 Configure the Ethernet Connection

This procedure describes how to configure the Ethernet on the network side, so that user services can be connected to the external network.

The ZXHN H1600 supports route-based and bridge-based WAN connections.

- Routing connection



- Bridge-based connection

## Steps

1. On the main page of the ZXHN H1600, select **Internet > WAN > Ethernet** to the **Ethernet Connection** page, see [Figure 5-9](#).

**Figure 5-9 Ethernet Connection page**

### ▼ Ethernet Connection

The screenshot shows the 'New Item' configuration window for an Ethernet connection. The 'Type' is set to 'Routing'. The 'Service List' includes 'INTERNET', 'TR069', 'VoIP', and 'IPTV'. The 'MTU' is set to '1492'. The 'Link Type' is 'PPP' and the 'PPP Transfer Type' is 'PPPoE'. The 'PPP' section has 'Username' and 'Password' fields. The 'IP Version' is 'IPv4' and 'VLAN' is set to 'Off'. There are 'Apply' and 'Cancel' buttons at the bottom right.

[Table 5-2](#) lists the new item parameters.

**Table 5-2 Parameter Descriptions for the DSL**

Parameter	Description
Connection Name	Name of the connection.
Type	The connection type includes <b>Routing</b> and <b>Bridge Connection</b> . In this case, Routing is selected.
Service List	Options: INTERNET, TR069, VoIP, IPTV. This parameter must be consistent with service configuration. For example, if <b>INTERNET</b> is selected, it indicates that the WAN connection supports the Internet access service only. If <b>TR069</b> is selected, it indicates that the WAN connection supports remote management.
MTU	Define the maximum transfer unit.

Parameter	Description
	In this case, default value is 1492.
Link Type	There are two link types: PPP and IP.
PPP Transfer Type	In this case, default value is PPPoE.
<b>PPP</b>	
Username/Password	PPPoE user name and password. They are provided by the ISP.
IP Version	The IP version includes: IPv4 and IPv6 IPv4/v6 In this case, IPv4 is selected.
<b>IPv4</b>	
IP Type	By default, it is set to DHCP. Options: <ul style="list-style-type: none"> <li>● DHCP: The DHCP server automatically allocates a dynamic IP address to the device.</li> <li>● Static: You need to specify a static IP address for the device.</li> </ul>
IP Address	IP Address of ZXHN H1600.
Subnet Mask	Subnet mask of ZXHN H1600.
Gateway	It is usually the IP address of the ZXHN H1600 by default.
DNS1-DNS3	IP address of the DNS server for static connections. You can set up to three IP addresses for the server. These IP addresses are provided by the ISP.
NAT	Enable or disable the NAT function.
<b>IPv6</b>	
IPv6 Info Acquire Mode	Specifies how to acquire IPv6 information for the WAN connection. It is valid only if the WAN connection supports IPv6. The options are: <ul style="list-style-type: none"> <li>● Manual :You need to set the global address, gateway, and DNS acquisition modes.</li> <li>● Auto :The global address, gateway, and DNS acquisition modes are automatically configured.</li> </ul>
Request PD	By default, the <b>On</b> button is selected.
Unnumbered Mode	By default, the <b>On</b> button is not selected. If it is selected, Specifies how to acquire the global IPv6 address.
GUA Allowed From	Specifies how to acquire the global IPv6 address. It is valid only when the IPv6 Info Get Mode parameter is set to be Manual Mode. Options:

Parameter	Description
	<ul style="list-style-type: none"> <li>● DHCPv6: The device acquires a global address through DHCPv6. If no option is selected, it indicates that no address acquisition mode is configured.</li> <li>● PD: You need to set a static IPv6 address.</li> <li>● SLAAC: The device generates a global address in accordance with the RA packets from the upper-layer server.</li> </ul>
GUA	Mode of obtaining global address.
Gateway	It is usually the IPv6 address of the ZXHN H1600 device by default.
PD	Prefix Delegation.
DNS1–DNS3	IPv6 address of the DNS server for static connections. You can set up to three IPv6 addresses for the server. These IPv6 addresses are provided by the ISP.
VLAN	Specifies whether to carry a VLAN tag in the packets sent over the WAN connection. By default, <b>On</b> button is not selected. If it is selected, a VLAN tag is carried in the packets sent over the WAN connection, and the VLAN ID must be set.
VLAN ID	Identifies a VLAN. Range: 0–4094. To ensure normal service operation, the <b>VLAN ID</b> must be the same as that set in upper-layer MDU/DSLAM configuration.



#### Note

In the ZXHN H1600 provisioning, configure only one Internet-WAN connection and delete other WAN connections.

2. Click **Apply** button to apply the changes.

### 5.2.3 Configure the 3G


A Dongle device can be connected to ZXHN H1600 through a USB interface. If the Dongle has a 3G(SIM) card inserted, the ZXHN H1600 can access the Internet through the Dongle device.

This page provides the parameters of the 3G connection configuration function.

#### Configuration Process

Table 5-3 lists the 3G process of configuring the WAN connection.

**Table 5-3 3G Configuration Process**

Steps	Operations	Instructions
1	Insert 3G device.	Null.
2	Check the 3G device status.	The signal strength can verify whether the network card is plugged.
3	Create a 3G WAN connection.	Click  <a href="#">Create New Item</a> on the page, and create a new 3G connection.
4	Check the 3G connection status.	The IP address getting from carries can verify that the 3G WAN Connection based on IPv4 was completed successfully.

**Note**

What to do when 3G device is not ready?


1. Check whether the dongle is plugged in.
2. If the device is already plugged in, please check whether the USB is contacted well.
3. If the device is still unrecognized, maybe it has been damaged. Please replace the device.

**Steps**

1. Insert 3G device.
2. On the main page of the ZXHN H1600, select **Internet > Status > 3G > Mobile Network** to the **Mobile Network** page. The signal strength can verify the network card is plugged, as shown in [Figure 5-10](#).

**Figure 5-10 Mobile Network**

▼ Mobile Network

Signal Strength	
Service Provider(MCC/MNC)	
Network Mode	
IMEI	355434049347323
Alarm	SIM Card PIN Needed

Refresh

3. On the main page of the ZXHN H1600, select **Internet > WAN > 3G** to the **3G Connection** page, as shown in [Figure 5-11](#).

Figure 5-11 New 3G Connection

**New Item**

Connection Name:

PDP Type: ☒ IP ☐ PPP

APN:

Dial Number:

MTU:

Username:

Password:

Authentication Type:  ▼

Connection Mode:  ▼

NAT Switch: ☒ On ☐ Off

4. Set the parameters and click **Apply**. For a description of the parameters, refer to [Table 5-4](#).

Table 5-4 New 3G Connection parameters

Parameter	Description
Connection Name	Name the 3G connection. For example "3G".
PDP Type	There are two PDP types: <ul style="list-style-type: none"> <li>● IP</li> <li>● PPP</li> </ul>
APN	Set the communication standard of the access network to be used. For example "3gnet".
Dial Number	Dial Number. Different communication standards have different dial numbers. For example "*99#".
MTU	Define the maximum transfer unit.
Username/Password	The Username/Password of new 3G connection.
Authentication Type	There are three authentication types: <ul style="list-style-type: none"> <li>● Auto</li> <li>● PAP</li> <li>● CHAP</li> </ul>
Connection Mode	There are two connection modes: <ul style="list-style-type: none"> <li>● Always On</li> </ul>

Parameter	Description
	● On Demand
Auto-disconnected without traffic	Setting this parameter when <b>Connection Mode</b> is <b>On Demand</b> .
NAT Switch	Select on/off NAT switch function.

5. On the main page of the ZXHN H1600, select **Internet > Status > 3G** to the **3G Working Mode** page, as shown in [Figure 5-12](#).

**Figure 5-12 3G Working Mode**

▼ 3G Working Mode

3G Mode ☒ Backup ☐ Close

Backup Interval  s

Recovery Primary Uplink Interval  s

Apply Cancel

6. Set the parameters and click **Apply**. For a description of the parameters, refer to [Table 5-5](#).

**Table 5-5 3G Working Mode parameters**

Parameter	Description
3G Mode	Enables or disables the 3G Working function.
Backup Interval	Sets the interval after which services are switched to the standby line when the active line is interrupted.
Recovery Primary Uplink Interval	Sets the interval after which services are switched back to the active line when the active line is recovered.

## Result

On the main page of the ZXHN H1600, select **Internet > Status > 3G** to the **3G Connection Status** page, as shown in [Figure 5-13](#).

**Figure 5-13 3G Connection Status**

## ▼ 3G Connection Status

Connection Name	3G
PDP Type	IP
APN	3gnet
Dial Number	*99#
NAT Switch	On
IP Address	10.13.241.4/255.255.255.255
DNS	58.240.57.33/221.6.4.66/0.0.0.0
Connection Status	Connected
Disconnect Reason	None
Online Time	0 h 2 min 55 s

[Refresh](#)

## 5.3 Configure the QoS

### 5.3.1 Configure the QoS Global Parameters

This page provides the function of [QoS](#) switch and other global parameters configuration. Packets that match no classification rules will be processed according to the default policy showed in this page.

**Steps**

1. On the main page of the ZXHN H1600, select **Internet > QoS > QoS Global Configuration** to the **QoS Global Configuration** page, see [Figure 5-14](#).

**Figure 5-14 QoS Global Configuration page**

## ▼ QoS Global Configuration

QoS Switch

☐ On ☒ Off

[Apply](#) [Cancel](#)

2. Set radiobox **On** to enable QoS function.
3. Click **Apply** button to apply the changes.

### 5.3.2 Configure the QoS Classification

This page provides the parameters of QoS classification configuration features.

## Steps

1. On the main page of the ZXHN H1600, select **Internet > QoS > Classification** to the **Classification** page.
2. Click to create new QoS classification, see [Figure 5-15](#).

**Figure 5-15 New QoS Classification Page**

### ▼ Classification

[What should be noticed when configuring QoS classification?](#)

[Table 5-6](#) lists the QoS classification Configuration parameters.

**Table 5-6 Parameter Descriptions for the QoS Classification**

Parameter	Description
On/Off	Set radiobox <b>On</b> to enable the function of classification.



Parameter	Description
Name	To create a QoS classification, enter the name of the classification.
Classification Priority	It can be modified by ISP.
<b>Packets Classification Criterion</b>	
All Interface	Set radiobox <b>On</b> to enable all Interface.
Ingress	Specify the data traffic direction.
Source MAC Address	Source host MAC address.
Destination MAC Address	Destination host MAC address.
802.1p	Specify the 802.1p value to modify the service priority.
VLAN ID	Identifies a VLAN. Range: 0–4094. To ensure normal service operation, the <b>VLAN ID</b> must be the same as that set in upper-layer configuration.
Level 2 Protocol	The level 2 protocol includes: Unconcerned, IPv4, IPv6, <a href="#">ARP</a> and <a href="#">PPPoE</a> .
Source IP	Source host IP address.
Destination IP	Destination host IP address.
<a href="#">DSCP</a>	DSCP value.
Level 3 Protocol	The Level 3 Protocol includes: Unconcerned, <a href="#">TCP</a> , <a href="#">UDP</a> and <a href="#">ICMP</a> .
Source Port	Source port number of the matching packets.
Destination Port	Destination port number of the matching packets.
TCP ACK	Set radiobox <b>On</b> to enable the function of TCP ACK.
<b>Packets Classification Result</b>	
802.1p Re-marking	802.1p identifier value.
DSCP Re-marking	DSCP identifier.
Queue Priority	Range:1-8.

- Click **Apply** button to apply the changes.

### 5.3.3 Configure the QoS Congestion Management

The procedure provides the parameters of QoS congestion management configuration features.

## Steps

1. On the main page of the ZXHN H1600, select **Internet > QoS > Congestion Management** to open the **Congestion Management** page, see [Figure 5-16](#).

**Figure 5-16 Congestion Management**

### ▼ Congestion Management

[What should be noticed when configuring QoS congestion management?](#)

Interface WAN\_ETH

▼ QOS.Queue.1

Name	<input type="text" value="QOS.Queue.1"/>
Priority	<span>1</span>
Algorithm	<span>SP</span>
Traffic Classes	<input type="text" value="1"/>

Apply Cancel

[Table 5-7](#) lists the QoS congestion management parameters.

**Table 5-7 QoS Congestion Management Parameters**

Parameter	Description
Queue Switch	Select <b>On</b> to enable the function of queue. Select <b>Off</b> to disable the function of queue.
Name	To create a QoS congestion, enter the name of the congestion.
Priority	Queue priority. Range: 1 – 4. Each queue has a priority, queue priority is higher, the lower the priority value, and the SP queue priority value must be less than WRR queue.
Algorithm	Options: <ul style="list-style-type: none"> <li>● <b>SP</b>: Under the same interface, if a queue's algorithm is SP, its priority must not be used by other queues.</li> <li>● <b>DWRR</b>: If there are four queues, and four weights, which are 100% in total, can be configured for the queues, the packets for each queue are sent according to open the corresponding weight.</li> </ul>
Weight	Weight value of the WRR/WFQ algorithm. If the weight values in the four rules are respectively 6, 3, 2, 1, the bandwidth for the value of 3 is 3/(6+3+2+1)=25%.
Traffic Classes	Categorization mechanism.

Parameter	Description
	<b>Traffic Classes</b> is used to bind classification to a queue. Use "," to join numbers when binding several classifications, e.g. "1,2,10". Please note that different queues in an interface cannot bind the same classification.

- Click **Apply** button to apply the changes.



#### Note

- Each interface can be configured up to 8 queues. When the queues of interface are emptied, scheduling policies will be removed.
- Under the same interface, if a queue's algorithm is SP, its priority must not be used by other queues.
- There is a default queue in every interface. If not specified, the first queue will work as the default queue, otherwise, the last setting queue will be the default queue. Note that the default queue will automatically enabled and can not be disabled.
- "Traffic Classes" is used to bind classification to a queue. Use "," to join numbers when binding several classifications, e.g. "1,2,10". Please note that different queues in an interface cannot bind the same classification.

### 5.3.4 Configure the QoS Traffic Shaping

The procedure provides the parameters of QoS traffic shaping configuration features.

#### Steps

- On the main page of the ZXHN H1600, select **Internet > QoS > Traffic Shaping** to open the **Traffic Shaping** page, see [Figure 5-17](#).

**Figure 5-17 Traffic Shaping**

#### ▼ Traffic Shaping

[What should be noticed when configuring QoS traffic shaping?](#)

2. Set the parameters.

[Table 5-8](#) lists the QoS traffic shaping parameters.

**Table 5-8 QoS Traffic Shaping parameters**

Parameter	Description
On/Off	Click <b>On</b> to enable the traffic shaping function. Click <b>Off</b> to disable the traffic shaping function.
Name	New QoS traffic shaping name.
Interface	Select an interface from the drop-down list.
Rate	Committed access rate. Range: 0,8192 – 1000000000. The shaping rate value of 0 indicates no speed limit.

3. Click **Apply** button to apply the changes.

## 5.4 Configure the Security

### 5.4.1 Configure the Firewall Level

The section describes how to configure firewall level.

#### Steps

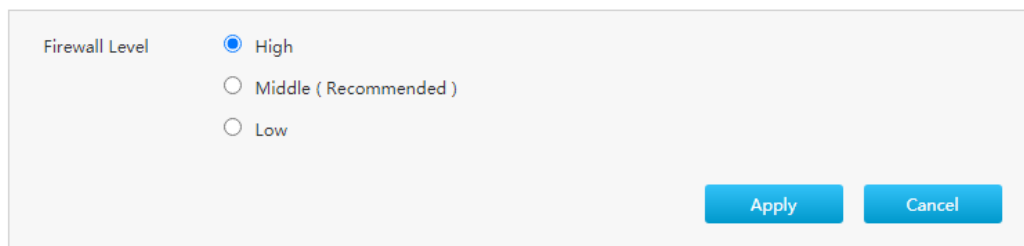
#### Configure the Firewall

1. On the main page of the ZXHN H1600, select **Internet > Security > Firewall** to the **Firewall** page, see [Figure 5-18](#).

**Figure 5-18 Firewall Page**

#### ▼ Firewall

[What should be noticed when configuring the firewall level?](#)



Firewall Level

☒ High

☐ Middle ( Recommended )

☐ Low

Apply Cancel

2. Set the parameters. For a description of the parameters, refer to [Table 5-9](#).

**Table 5-9 Firewall Parameter Descriptions**

Parameter	Description
Firewall Level	<ul style="list-style-type: none"> <li>● High: allows legal access from the WAN but forbids Internet devices from sending ping packets to the WAN interface of the ZXHN H1600.</li> <li>● Middle(Recommended): allows legal access from the WAN and blocks dangerous data from the Internet.</li> <li>● Low: allows legal access from the WAN and allows Internet devices to send ping packets to the WAN interface of the ZXHN H1600.</li> </ul>

3. Click **Apply** button to apply the changes.

### Configure the Anti-DoS Attack

1. On the main page of the ZXHN H1600, select **Internet > Security > Firewall** to the **Anti-DoS Attack** page, see [Figure 5-19](#).

**Figure 5-19 Anti-DoS Attack Page**

#### ▼ Anti-DoS Attack

▼ Anti-PortScan

**i** "Threshold" means the maximum number of TCP or UDP connections from one host in WAN side to CPE itself every 3 seconds.

Enable ☒

Threshold

Apply Cancel

2. Set the parameters. For a description of the parameters, refer to [Table 5-9](#).

**Table 5-10 Anti-DoS Attack Parameter Descriptions**

Parameter	Description
Enable	To enable the Anti-PortScan to be configured, select this check box.
Threshold	<b>Threshold</b> means the maximum number of TCP or UDP connections from one host in WAN side to CPE itself every 3 seconds.

3. Click **Apply** button to apply the changes.

## 5.4.2 Configure the Filter Criteria

The section describes how to configure filter criteria.

### Steps

#### Configure the Filter Switch and Mode

1. On the main page of the ZXHN H1600, select **Internet > Security > Filter Criteria** to the **Filter Criteria** page.
2. Click **Filter Switch and Mode Configuration** to the configuration page, see [Figure 5-20](#).

**Figure 5-20 Filter Switch and Mode Configuration Page**

▼ Filter Switch and Mode Configuration

3. Configure filter switch and mode configuration parameters, see [Table 5-11](#).

**Table 5-11 Parameter Descriptions for the Filter Switch and Mode Configuration**

Parameter	Description
URL Filter	Set radiobox <b>On</b> to enable the URL filter function.
Mode	There are two modes: <ul style="list-style-type: none"> <li>● Black List: Addresses in the <b>URL Filter</b> list are not allowed to access.</li> <li>● White List: Only addresses in the <b>URL Filter</b> list can be accessed.</li> </ul>

4. Click **Apply** button to apply the changes.

### Configure the URL Filter

1. Click **URL Filter** to open **URL Filter** page, see [Figure 5-21](#).

**Figure 5-21 URL Filter Page**

▼ URL Filter

2. [Table 5-12](#) lists the URL filter parameters.

**Table 5-12 Parameter Descriptions for the URL Filter**

Parameter	Description
Name	The name of the URL filter.
URL	The URL address.

3. Click **Apply** button to apply the changes.

### Configure the IP Filter

1. Click **IP Filter** to open the IP filter page, see [Figure 5-22](#).

**Figure 5-22 IP Filter Page**

▼ IP Filter

[What should be noticed when configuring Firewall IP Filter?](#)

▼ New Item

☐ On ☒ Off

Name

Target

☒ Accept ☐ Drop

Rule Priority

IP Version

Any ▼

Source IP

Destination IP

Protocol

Any ▼

Ingress

Any ▼

Egress

Any ▼

DSCP

Apply

Cancel

+

 Create New Item

2. [Table 5-13](#) lists the IPv4 filter parameters.

**Table 5-13 Parameter Descriptions for the IPv4 Filter**

Parameter	Description
On/Off	Set radiobox <b>On</b> to enable the function of IP filter.
Name	Name of the IP filter item. The name must be specified.
Target	Specify to discard or permit the data packages.
Rule Priority	Specify the value to modify the service priority.
IP Version	The IP version includes:Any, IPv4 , IPv6.

Parameter	Description
Source IP/Destination IP	Source/Destination destination IP address.
Protocol	Select the protocol that needs to filter packets. By default, it is Any.
Ingress	Specify the data traffic direction. The Ingress option and egress option cannot be the same. <ul style="list-style-type: none"> <li>● If the ingress is LAN, the egress should be a WAN or 3G connection. The data traffic direction is upstream.</li> <li>● If the ingress is a WAN or 3G connection, the egress should be the LAN. The data traffic direction is downstream.</li> </ul>
Egress	Specify the data traffic direction. The Ingress option and egress option cannot be the same. <ul style="list-style-type: none"> <li>● If the ingress is LAN, the egress should be a WAN or 3G connection. The data traffic direction is upstream.</li> <li>● If the ingress is a WAN or 3G connection, the egress should be the LAN. The data traffic direction is downstream.</li> </ul>
DSCP	A DSCP is specified for the TOS byte in the IP header of each packet to indicate the priority. Range: 0–63.

3. Click **Apply** button to apply the changes.

### 5.4.3 Configure the Local Service Control

The section describes how to configure local service control.

#### Steps

#### Configure the Service Control-IPv4

1. On the main page of the ZXHN H1600, select **Internet > Security > Local Service Control** to the **Local Service Control** page.
2. Click **Service Control-IPv4** to open **Service Control-IPv4** page, see [Figure 5-23](#).




**Figure 5-23 Service Control-IPv4 Page**

▼ Service Control - IPv4

---

▼ New Item

☐ On
 ☒ Off
 

Name

Target

☒ Accept
 ☐ Drop

Ingress

Auto ▼

IP Range

0  0  0  0 ~  0  0  0  0

Service Type

☐ HTTP
 ☐ FTP
 ☐ TELNET
 ☐ HTTPS
 ☐ PING

Apply

Cancel

+

 Create New Item

- Configure the service control-IPv4 parameters.

Table 5-14 lists the local service control-IPv4 parameters.

**Table 5-14 Parameter Descriptions for the Service Control-IPv4**

Parameter	Description
On/Off	Click <b>On</b> to enable the function. Click <b>Off</b> to disable the function.
Name	Name of the Service Control item. The name must be specified.
Target	Specify to discard or permit the data packages.
Ingress	Specify the data stream inbound direction, and this parameter must be specified. <ul style="list-style-type: none"> <li>If the Ingress is WAN_All, all the WAN connection can access ZXHN H1600.</li> <li>If the Ingress is LAN, the LAN side can access ZXHN H1600.</li> </ul>
IP Range	The IP address segment that needs to be filtered. When the IP segment is null, it refers to all the IP addresses.
Service Type	Specify the service that is permitted or denied to access.

- Click **Apply** button to apply the changes.

### Configure the Service Control-IPv6


- Click **Service Control-IPv6** to open **Service Control-IPv6** page, see Figure 5-24.

**Figure 5-24 Service Control-IPv6 Page**

▼ Service Control - IPv6

---

▼ New Item

☐ On
 ☒ Off
 

Name

Target

☒ Accept
 ☐ Drop

Ingress

Auto ▼

Prefix

/

Service Type

☐ HTTP
 ☐ FTP
 ☐ TELNET
 ☐ HTTPS
 ☐ PING

Apply

Cancel

+

 Create New Item

Table 5-15 lists the Service Control-IPv6 parameters.

**Table 5-15 Parameter Descriptions for the Service Control-IPv6**

Parameter	Description
On/Off	Click <b>On</b> to enable the function. Click <b>Off</b> to disable the function.
Name	Name of the Service Control item. The name must be specified.
Target	Specify to discard or permit the data packages.
Ingress	Specify the data stream inbound direction, and this parameter must be specified. <ul style="list-style-type: none"> <li>● If the Ingress is WAN_All, all the WAN connection can access ZXHN H1600.</li> <li>● If the Ingress is LAN, the LAN side can access ZXHN H1600.</li> </ul>
Prefix	IPv6 address prefix.
Service Type	Type Specify the service that is permitted or denied to access.

- Click **Apply** button to apply the changes.

### Configure the Remote Service Port Control-IPv4

- Click **Remote Service Port Control - IPv4** to open **Remote Service Port Control - IPv4** page, see Figure 5-25.Remote Service Port Control - IPv4 Page

Figure 5-25 Remote Service Port Control - IPv4 Page

▼ Remote Service Port Control - IPv4

HTTP

80

FTP

21

TELNET

23

HTTPS

443

Apply

Cancel

Table 5-16 lists the remote service port control - IPv4 parameters.

Table 5-16 Parameter Descriptions for the Remote Service Port Control - IPv4

Parameter	Description
HTTP	The remote service port control of HTTP.
FTP	The remote service port control of FTP.
TELNET	The remote service port control of TELNET.
HTTPS	The remote service port control of HTTPS.

2. Click **Apply** button to apply the changes.

5.4.4 Configure the ALG

The section describes how to configure **ALG**. **ALG** provides the relevant parameters of security configuration function.

Steps

1. On the main page of the ZXHN H1600, select **Internet > Security > ALG** to the **ALG** page, the page see [Figure 5-26](#).

**Figure 5-26 ALG Configuration Page**

▼ ALG

FTP ALG	<input checked="" type="radio"/> On <input type="radio"/> Off
H323 ALG	<input checked="" type="radio"/> On <input type="radio"/> Off
PPTP ALG	<input checked="" type="radio"/> On <input type="radio"/> Off
RTSP ALG	<input checked="" type="radio"/> On <input type="radio"/> Off
SIP ALG	<input checked="" type="radio"/> On <input type="radio"/> Off
TFTP ALG	<input checked="" type="radio"/> On <input type="radio"/> Off

All On | All Off

Apply Cancel

2. Select the **ALG** services.
3. Click **Apply** button to apply the changes.

**Note**

- Click **All On** to select all **ALG** services.
- Click **All Off** to cancel all **ALG** services.

### 5.4.5 Configure the DMZ

The section describes how to configure **DMZ**. **DMZ** provides the parameters of DMZ configuration features.

#### Steps

1. On the main page of the ZXHN H1600, select **Internet > Security > DMZ** to the **DMZ** page, the page see [Figure 5-27](#).

**Figure 5-27 DMZ Configuration Page**

▼ DMZ

DMZ	<input type="radio"/> On <input checked="" type="radio"/> Off
LAN Host	<input type="text"/>

Apply Cancel

[Table 5-17](#) lists the DMZ parameters.

**Table 5-17 Parameter Descriptions for the DMZ**

Parameter	Description
DMZ Switch	Enable the <a href="#">DMZ</a> host function.
LAN Host	The IP address or the MAC address of the computer at the LAN side.

2. Click **Apply** button to apply the changes.

### 5.4.6 Configure the Port Forwarding

This procedure introduces how to configure Port Forwarding so that a computer from the external network can access the LAN-side server through the WAN connection. Port Forwarding provides the parameters of Port Forwarding configuration features.

If you have local servers for different services and you want to make them publicly accessible, you need to specify the port forwarding policy. With [NAT](#) applied, it translates the internal IP addresses of these servers to a single IP address that is unique on the Internet.

To the Internet users, all virtual servers on your LAN have the same IP Address. This IP Address is allocated by your [ISP](#). This address should be static, rather than dynamic, to make it easier for Internet users to connect to your servers. However, you can use dynamic [DNS](#) feature to allow users to connect to your virtual servers by using a URL, instead of an IP address.

#### Steps

1. On the main page of the ZXHN H1600, select **Internet > Security > Port Forwarding** to the **Port Forwarding** page, the page see [Figure 5-28](#).

**Figure 5-28 Port Forwarding Configuration Page**

## ▼ Port Forwarding

[What should be noticed when configuring port forwarding?](#)

The screenshot shows the 'Port Forwarding' configuration interface. It includes a 'New Item' section with a radio button to toggle the feature 'On' or 'Off'. Below this, there are several input fields: 'Name' (text), 'Protocol' (dropdown menu showing 'TCP'), 'WAN Host IP Address' (IP range selector showing '0.0.0.0 ~ 0.0.0.0'), 'LAN Host' (text), 'WAN Port' (text), and 'LAN Host Port' (text). At the bottom right of the configuration area are 'Apply' and 'Cancel' buttons. At the bottom left is a '+ Create New Item' button.

2. Configure the Port Forwarding parameters.

[Table 5-18](#) lists the Port Forwarding settings parameters.

**Table 5-18 Parameter Descriptions for the Port Forwarding**

Parameter	Description
On/Off	Set radiobox <b>On</b> to enable the port forwarding function.
Name	Virtual host name, which cannot be null.
Protocol	Protocol name, including TCP, UDP, TCP AND UDP. The default protocol is TCP.
WAN Host IP Address	IP address segment of the WAN-side hosts.
LAN Host	IP address of the LAN-side host.
WAN Port	Port segment of the WAN-side hosts.
LAN Host Port	Port number range of the LAN-side host. Range: 1-65535.

3. Click **Apply** button to apply the changes.

## 5.5 Configure the Parental Controls

The section describes how to configure parental controls.

### Steps

1. On the main page of the ZXHN H1600, select **Internet > Parental Controls** to the **Parental Controls** page, see [Figure 5-29](#).

**Figure 5-29 Parental Controls**

▼ Parental Controls

---

▼ New Item

☐ On
 ☒ Off

Name

User Identity

:

:

:

:

Select from the associated devices

Time Policy

Days

☐ Everyday
   
☐ Sun.
 ☐ Mon.
 ☐ Tues.
 ☐ Wed.
 ☐ Thur.
 ☐ Fri.
 ☐ Sat.

Duration

00

h

00

min

~

23

h

59

min

All Day

Action

Ban Internet Access ▼

Apply

Cancel

+

 Create New Item

2. Configure the parental controls parameters.

Table 5-19 lists the parental controls parameters.

**Table 5-19 Parental Controls Parameters**

Parameter	Description
On/Off	Click <b>On</b> to enable the parental controls function.
Name	The name of parental control.
User Identity	Configure the user information according to the IP address or MAC address.  If the <b>All user</b> option is selected, all the users that use the ZXHN H1600 device are included.
Days	Specify the days when the parent control settings are applied.
Duration	Specify the time when the parent control settings are applied.
Action	The device supports: <ul style="list-style-type: none"> <li>● Ban Internet Access After this mode is selected, Internet access is not allowed.</li> <li>● URL Black List After this mode is selected, websites set in <b>URL</b> are filtered out, and cannot be visited.</li> <li>● URL White List After this mode is selected, only websites set in <b>URL</b> can be accessed.</li> </ul>

3. Click **Apply** button to apply the changes.

## 5.6 Configure the DDNS

The section describes how to configure [DDNS](#). **DDNS** provides the parameters of DDNS configuration function.

### Steps

1. On the main page of the ZXHN H1600, select **Internet > DDNS** to the **DDNS** page, see [Figure 5-30](#).

**Figure 5-30 DDNS Configuration Page**

▼ DDNS

Provider	<input type="text" value="DynDNS"/>
DDNS	<input type="radio"/> On <input checked="" type="radio"/> Off
Provider URL	<input type="text" value="http://www.dyndns.com"/>
Username	<input type="text"/>
Password	<input type="password" value="*****"/>
Host Name	<input type="text"/>

2. Configure the DDNS parameters.

[Table 5-20](#) lists the DDNS parameters.

**Table 5-20 Parameter Descriptions for the DDNS**

Parameter	Description
Provider	Supported provider. Options: DynDNS, DtDNS, No-IP, easyDNS, freedns and TZO. If the DtDNS is selected, the <b>WAN Connection</b> should be configured.
DDNS	DDNS Switch. Click On to enable the DDNS function.
Provider URL	The URL of provider. If the DynDNS HTTP is used, the URL is <i>http://www.dyndns.com</i> . If the DtDNS HTTP is used, the URL is <i>http://www.dtdns.org</i> . If the No-IP HTTP is used, the URL is <i>http://www.no-ip.com</i> . If the easyDNS HTTP is used, the URL is <i>http://www.easydns.com</i> . If the freedns HTTP is used, the URL is <i>http://freedns.afraid.org</i> . If the TZO HTTP is used, the URL is <i>http://www.tzo.com</i> .
Username	DDNS server user name.
Password	DDNS server password.
Host name	Host name corresponding to the user.



3. Click **Apply** button to apply the changes.

## 5.7 Configure the SNTP

The section describes how to configure [SNTP](#). **SNTP** provides the parameters of SNTP configuration features.

### Steps

1. On the main page of the ZXHN H1600, select **Internet > SNTP** to the **SNTP** page, see [Figure 5-31](#).

**Figure 5-31 SNTP Configuration Page**

▼ SNTP

Current Date and Time	1970-01-01T00:25:30
Time Zone	(GMT) Greenwich Mean Time: Dublin ▼
NTP Server 1	
NTP Server 2	
NTP Server 3	
NTP Server 4	
NTP Server 5	
Poll Interval	86400 s
Automatically Adjust Clock For Daylight	<input checked="" type="radio"/> On <input type="radio"/> Off
Saving Time	
DSCP	

Apply Cancel

2. Configure the SNTP parameters.

[Table 5-21](#) lists the SNTP parameters.

**Table 5-21 Parameter Descriptions for the SNTP**

Parameter	Description
Time Zone	Time zone.
NTP Server1-NTP Server5	IP address of the primary/secondary/third/fourth/fifth NTP server.
Poll Interval	Interval of time synchronization.Unit: second.
Automatically Adjust Clock For Daylight	Enable or disable the automatically adjust clock for daylight function.

Parameter	Description
DSCP	To ensure the QoS of communication, <b>DSCP</b> (Differentiated Services Code Point) encodes the 8 flag bytes in the IP header of data packets to classify service types and distinguish service priorities. The value range of DSCP is 0~63 and each DSCP code value is mapped to a defined PHB (Per-Hop-Behavior) code.

- Click **Apply** button to apply the changes.

## 5.8 Configure the Port Binding

The section describes how to configure Port Binding. **Port Binding** provides the parameters of Port Binding configuration features.

### Steps

- On the main page of the ZXHN H1600, select **Internet > Port Binding** to the **Port Binding** page, see [Figure 5-32](#).

**Figure 5-32 Port Binding Configuration Page**

▼ Port Binding

▼ Route\_3G

<input type="checkbox"/> LAN1	<input type="checkbox"/> LAN2	<input type="checkbox"/> LAN3	<input type="checkbox"/> LAN4
<input type="checkbox"/> SSID1	<input type="checkbox"/> SSID2	<input type="checkbox"/> SSID3	<input type="checkbox"/> SSID4
<input type="checkbox"/> SSID5	<input type="checkbox"/> SSID6	<input type="checkbox"/> SSID7	<input type="checkbox"/> SSID8

All On | All Off

Apply Cancel

- Select the LAN or SSID port that you want to bind.
- Click **Apply** button to apply the changes.

## 5.9 Configure the Multicast

### 5.9.1 Configure the IGMP

The section describes how to configure **IGMP**. **IGMP** provides the parameters of IGMP configuration features.

**Steps**

1. On the main page of the ZXHN H1600, select **Internet > Multicast > IGMP** to the **IGMP** page, see [Figure 5-33](#).

**Figure 5-33 IGMP Configuration Page****▼ IGMP Mode**

IGMP Proxy ☐ On ☒ Off

Apply Cancel

2. Enable the IGMP functions, see [Table 5-22](#).

**Table 5-22 Parameter Descriptions for the IGMP**

Parameter	Description
IGMP Proxy	The system serves as a proxy server to forward IGMP packets from the MDU/DSLAM to other devices.

3. Click **Apply** button to apply the changes.

## 5.9.2 Configure the MLD

The section describes how to configure [MLD](#). **MLD** provides the parameters of MLD configuration features.

**Steps**

1. On the main page of the ZXHN H1600, select **Internet > Multicast > MLD** to the **MLD** page, see [Figure 5-34](#).

**Figure 5-34 MLD Configuration Page****▼ MLD Mode**

MLD Proxy ☐ On ☒ Off

Apply Cancel

2. Enable the MLD functions, see [Table 5-23](#).

**Table 5-23 Parameter Descriptions for the MLD**

Parameter	Description
MLD Proxy	The system serves as a proxy server to forward MLD packets from the MDU/DSLAM to other devices.

3. Click **Apply** button to apply the changes.

# Chapter 6

## Configure the Local Network

---

### Table of Contents

Check the Local Network Status.....	6-1
Configure the WLAN.....	6-2
Configure the LAN.....	6-7
Configure the Route.....	6-15
Configure the FTP.....	6-20
Configure the UPnP.....	6-21
Configure the DMS/DLNA.....	6-21
Configure the Samba Service.....	6-22
Configure the DNS.....	6-23
Configure the Device Role.....	6-24

## 6.1 Check the Local Network Status

The section describes how to check the status of Local Network. The relevant information of Local Network status includes **LAN Status**, **WLAN Status**, **WLAN Client Status**, **LAN Client Status** and **USB Storage Status**. The relevant information of Local Network status is shown as below.

### Steps

1. On the main page of the ZXHN H1600, select **Local Network > Status** to the **Local Network Status** page, see [Figure 6-1](#).

**Figure 6-1 Local Network Status Page**

- ▶ WLAN Status
- ▶ LAN Status
- ▶ WLAN Client Status
- ▶ LAN Client Status
- ▶ USB Storage Status

2. Click **Refresh** to refresh the information.

## 6.2 Configure the WLAN

### 6.2.1 Configure the Basic Parameters of the WLAN

The section describes how to configure [WLAN](#) basic settings.

#### Steps

##### Configure the WLAN On/Off

1. On the main page of the ZXHN H1600, select **Local Network > WLAN > WLAN Basic** to the **WLAN Basic** page, see [Figure 6-2](#).

**Figure 6-2 WLAN On/Off Configuration**

#### ▼ WLAN On/Off Configuration

The figure shows a configuration window titled 'WLAN On/Off Configuration'. It contains the following settings:

- WLAN (2.4GHz): ☒ On ☐ Off
- WLAN (5GHz): ☒ On ☐ Off
- Roaming Limit (2.4GHz):  (-110 - -40)
- Roaming Limit (5GHz):  (-110 - -40)

At the bottom right, there are two buttons: 'Apply' and 'Cancel'.

2. [Table 6-1](#) lists the WLAN on/off configuration parameters.

**Table 6-1 WLAN On/Off Configuration parameters**

Parameter	Description
WLAN (2.4GHz)	Click <b>On</b> to enable the 2.4GHz wireless function.

Parameter	Description
	Click <b>Off</b> to disable the 2.4GHz wireless function.
WLAN (5GHz)	Click <b>On</b> to enable the 5GHz wireless function. Click <b>Off</b> to disable the 5GHz wireless function.
Roaming Limit (2.4GHz)	The default value is recommended.
Roaming Limit (5GHz)	The default value is recommended.

- Click **Apply** button to apply the changes.

### Configure the WLAN Global Parameters

- Click **WLAN Global Configuration** to the configuration page, see [Figure 6-3](#).

**Figure 6-3 WLAN Global Configuration Page**

▼ WLAN Global Configuration

---

▼ 2.4GHz

Channel

Mode

*i* The network card drivers of some Wi-Fi devices, such as laptops using Intel network cards, are old. Please upgrade the network card drivers or switch the Wi-Fi mode to b/g/n.

Band Width

SGI ☒ On ☐ Off

Beacon Interval  ms

Transmitting Power

► 5GHz

- [Table 6-2](#) lists the WLAN global configuration parameters.

**Table 6-2 Parameter Descriptions for WLAN Global Configuration**

Parameter	Description
Channel	Channel of the wireless network. A proper channel can be selected in accordance with the country code. Options: Auto, 1 - 13, default: Auto. Specifies the channel used for communication between the AP and the wireless site, depending on the local circumstance.
Mode	Options: <ul style="list-style-type: none"> <li>● IEEE 802.11b Only</li> <li>● IEEE 802.11g Only</li> <li>● IEEE 802.11n Only</li> <li>● Mixed(802.11b/g)</li> <li>● Mixed(802.11g/n)</li> </ul>

Parameter	Description
	<ul style="list-style-type: none"> <li>● Mixed(802.11b/g/n)</li> <li>● Mixed(802.11b/g/n/ax)</li> </ul>
Band Width	Radio frequency bandwidth, including Auto,20Mhz and 40Mhz.
SGI	Click <b>On</b> to enable <b>SGI</b> function. Click <b>Off</b> to disable <b>SGI</b> function.
Beacon Interval	Interval for transmitting beacon frames, default: 100 ms. Beacon frames are used for communicating with other AP devices or network control devices to announce the WLAN presence.
Transmitting Power	Level of radio signal transmitting power. A larger value indicates wider coverage. Options:100%, 80%, 60%, 40%, 20%.

- Click **Apply** button to apply the changes.



### Note

WLAN global configuration(5GHz) refers to WLAN global configuration(2.4GHz).

## Configure the Private WLAN SSID

- Click **Private WLAN SSID Configuration** to the configuration page, see [Figure 6-4](#).

**Figure 6-4 Private WLAN SSID Configuration Page**

### ▼ WLAN SSID Configuration

▼ SSID1 (2.4GHz) ☒ On ☐ Off

SSID Name:

SSID Hide: ☐ On ☒ Off

Encryption Type:

WPA Passphrase:

☐ show password

Maximum Clients:

- [Table 6-3](#) lists the WLAN SSID configuration parameters.

**Table 6-3 Parameter Descriptions for the WLAN SSID Configuration**

Parameter	Description
SSID Name	The name of SSID.



Parameter	Description
SSID Hide	Set radiobox <b>On</b> to hide the SSID information to prevent illegal users.
Encryption Type	Select encryption type.
WPA Passphrase	Password to connect to the wireless network. The value range is 8 - 63.
Maximum Clients	Maximum number of users that can access the SSID. The value range is 1 - 32.

3. Click **Apply** button to apply the changes.



#### Note

Private WLAN SSID Configuration(5GHz) refers to Private WLAN SSID Configuration(2.4GHz).

## 6.2.2 Configure the Advanced Parameters of the WLAN

**WLAN Advanced** provides the parameters of WLAN Advanced configuration features.

### Steps

#### Configure the Access Control-Mode

1. On the main page of the ZXHN H1600, select **Local Network > WLAN > WLAN Advanced** to the **WLAN Advanced** page.
2. Click **Access Control-Mode Configuration** the configuration page, see [Figure 6-5](#).

**Figure 6-5 Access Control-Mode Configuration Page**

#### ▼ Access Control-Mode Configuration

SSID1	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List
SSID2	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List
SSID3	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List
SSID4	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List
SSID5	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List
SSID6	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List
SSID7	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List
SSID8	<input checked="" type="radio"/> No Filter	<input type="radio"/> Black List	<input type="radio"/> White List

3. Configure the access control-mode configuration parameters.

[Table 6-4](#) lists the access control-mode configuration parameters.

**Table 6-4 Access Control-Mode configuration parameters**

Parameter	Description
No Filter	No filter is to be applied (the default).
Black List	Deny LAN users to access specific address.
White List	Allow LAN users to access specific address.

4. Click **Apply** button to apply the changes.

### Configure the Access Control-Rule

1. Click **Access Control-Rule Configuration** to the configuration page, see [Figure 6-6](#).

**Figure 6-6 Access Control-Rule Settings**

#### ▼ Access Control-Rule Configuration

[What should be noticed when configuring access control rules?](#)

2. Configure the access control-rule configuration parameters. [Table 6-5](#) lists the access control-rule configuration parameters.

**Table 6-5 Access Control-Rule Configuration parameters**

Parameter	Description
Name	The name of Access Control Item.
SSID	SSID name corresponding to the wireless network that the rule is applied to. The default value is SSID1.
MAC Address	The MAC address of the wireless device. We suggest to set the MAC addresses in access control list using a wireline connected device. Modifying the list using a wireless device may cause unexpected disconnection of the device used.

3. Click **Apply** button to apply the changes.

## 6.3 Configure the LAN

### 6.3.1 Configure the LAN(IPv4)

The section describes how to configure LAN(IPv4).

The relevant information of Internet status includes **Allocated Address(DHCP)**, **DHCP Server**, **DHCP Binding** and **Port Control**.

#### Steps

##### Check the Allocated Address(DHCP)

1. On the main page of the ZXHN H1600, select **Local Network > LAN > IPv4** to the **IPv4** page.
2. Click **Allocated Address(DHCP)** to the configuration, see [Figure 6-7](#).

**Figure 6-7 Allocated Address(DHCP) Page**

▼ Allocated Address (DHCP)

Host Name	MAC Address	IP Address	Port	Remaining Lease
A23329746	dc:4a:3e:40:dc:cf	192.168.1.2	LAN1	22h 55min 24s

Refresh

3. Click **Refresh** to refresh the informations.

##### Configure the DHCP Server

1. Click **DHCP Server** to the configuration, see [Figure 6-8](#).

**Figure 6-8 DHCP Server(IPv4) Page**

## ▼ DHCP Server

DHCP Server ☒ On ☐ Off

LAN IP Address 192 . 168 . 1 . 1

Subnet Mask 255 . 255 . 255 . 0

DHCP Start IP Address 192 . 168 . 1 . 2

DHCP End IP Address 192 . 168 . 1 . 254

ISP DNS ☐ On ☒ Off

Primary DNS 192 . 168 . 1 . 1

Secondary DNS 0 . 0 . 0 . 0

Lease Time Mode Custom ▼

Custom Lease Time 86400 s

Apply Cancel

2. Configure the DHCP server parameters.

Table 6-6 lists the DHCP server parameters.

**Table 6-6 Parameter Descriptions for the DHCP Server**

Parameter	Description
DHCP Server	Select <b>On</b> to let the device work as a DHCP server and assign IP addresses to open the client PCs or wireless devices.
LAN IP Address	The IPv4 address of LAN.
Subnet Mask	Subnet mask of the device.
DHCP Start IP Address	The start IP address of the DHCP address pool.
DHCP End IP Address	The end IP address of the DHCP address pool.
ISP DNS	Select the <b>On</b> check box to let the Assign IspDNS work.
Primary DNS	IP address of the DNS server, provided by ISP.
Secondary DNS	IP address of the DNS server2, provided by the ISP.
Lease Time Mode	The mode of Lease Time.
Custom Lease Time	The time during which the client PCs use the IP address assigned by the DHCP server. After the lease time expires, the private IP address will be available for assigning to other network devices.

3. Click **Apply** button to apply the changes.

**Configure the DHCP binding**

1. Click **DHCP Binding** to the configuration, see [Figure 6-9](#).

**Figure 6-9 DHCP Binding Page**

▼ DHCP Binding

New Item

Name

MAC Address

IP Address

Apply

Cancel

+ Create New Item

2. Configure the DHCP Binding parameters.  
[Table 6-7](#) lists the DHCP binding parameters.

**Table 6-7 Parameter Descriptions for the DHCP Binding**

Parameter	Description
Name	The name of the DHCP Binding.
MAC Address	The MAC address of the DHCP Binding.
IP Address	IP address of the DHCP Binding.

3. Click **Apply** button to apply the changes.

**Configure the Port Control**

1. Click **DHCP Binding** to the configuration, see [Figure 6-10](#).

**Figure 6-10 Port Control**

▼ Port Control

LAN1	<input checked="" type="radio"/> On <input type="radio"/> Off
LAN2	<input checked="" type="radio"/> On <input type="radio"/> Off
LAN3	<input checked="" type="radio"/> On <input type="radio"/> Off
LAN4	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID1	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID2	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID3	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID4	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID5	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID6	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID7	<input checked="" type="radio"/> On <input type="radio"/> Off
SSID8	<input checked="" type="radio"/> On <input type="radio"/> Off

All On | All Off

Apply Cancel

2. Configure the port control parameters.
  - Click **All On** to select all ports.
  - Click **All Off** to cancel all ports.
3. Click **Apply** button to apply the changes.

### 6.3.2 Configure the LAN(IPv6)

The section describes how to configure LAN(IPv6).

The relevant information of Internet status includes **Allocated Address(DHCPv6)**, **LAN Address Management**, **Static Prefix**, **DHCPv6 Server**, **RA Service**, **Port Control**.

#### Prerequisite

Before configuring the prefix delegation, make sure that the prefix delegation is enabled for the specified IPv6 WAN connection.


#### Steps

##### Check the Allocated Address(DHCPv6)

1. On the main page of the ZXHN H1600, select **Local Network > LAN > IPv6** to the **IPv6** page.
2. Click **Allocated Address (DHCPv6)** to the configuration page, see [Figure 6-11](#).

**Figure 6-11 Allocated Address(DHCPv6) Page**

## ▼ Allocated Address (DHCPv6)

 There are no data now.

Refresh

3. Click **Refresh** to refresh the information.

**Manage the LAN Address**

1. Click **LAN Address Management** to the configuration page, see [Figure 6-12](#).

**Figure 6-12 LAN Address Management Page**

## ▼ LAN Address Management

LAN IPv6 Address

Apply Cancel

2. Configure the LAN address parameters. [Table 6-8](#) lists the LAN address parameters.

**Table 6-8 Parameter Descriptions for the LAN Address**

Parameter	Description
LAN IPv6 Address	The IPv6 address of LAN.


3. Click **Apply** button to apply the changes.

**Configure the Static Prefix**

1. Click **Static Prefix** to the configuration page, see [Figure 6-13](#).

**Figure 6-13 Static Prefix Page**


## ▼ Static Prefix

New Item 

Name

Prefix  /

Apply Cancel

 Create New Item

2. Configure the static prefix parameters. [Table 6-9](#) lists the static prefix parameters.

**Table 6-9 Parameter Descriptions for the Static Prefix**

Parameter	Description
Name	The name of the prefix.
Prefix	IPv6 address and prefix length. Only a GUA prefix is supported. Prefix length: 64.

- Click **Apply** button to apply the changes.

### Configure the DHCPv6 Server

- Click **DHCPv6 Server** to the configuration page, see [Figure 6-14](#).

**Figure 6-14 DHCPv6 Server Page**

▼ DHCPv6 Server

[What should be noticed when configuring DHCPv6 server?](#)

DHCPv6 Server ☒ On ☐ Off

DNS Delegate Type ☒ Auto ☐ Manual

DNS Refresh Time  s

Prefix Delegate Type  ▼

**Apply** **Cancel**

- Configure the DHCPv6 server parameters.

[Table 6-10](#) lists the DHCPv6 server parameters.

**Table 6-10 Parameter Descriptions for the DHCPv6 Server**

Parameter	Description
DHCPv6 Server	Select <b>On</b> to let the device work as a DHCP server and assign IP addresses to the client PCs or wireless devices.
DNS Delegate Type	DNS Delegate Type: <ul style="list-style-type: none"> <li>Auto: One DNS selected automatically from all the available DNS will be delegated.</li> <li>Manual: One or more DNSs selected manually from all the DNSs configured before will be delegated.</li> </ul>
DNS Refresh Time	The time during which the client PCs use the IP addresses assigned by the DHCP server. After the lease time expires, the private IP address will be available for assigning to other network devices.
Prefix Delegate Type	Option: <ul style="list-style-type: none"> <li>Auto: One prefix selected automatically from all the available prefixes will be delegated.</li> </ul>



Parameter	Description
	<ul style="list-style-type: none"> <li>Manual: One or more prefixes selected manually from all the static prefixes configured before will be delegated.</li> <li>Disabled: No prefix will be delegated.</li> </ul>

- Click **Apply** button to apply the changes.

### Configure the RA Service

- Click **RA Service** to the configuration page, see [Figure 6-15](#).

**Figure 6-15 RA Service Page**

#### ▼ RA Service

[What should be noticed when configuring RA service?](#)

RA Service ☒ On ☐ Off

Specify MTU ☐ On ☒ Off

Preference

Minimum Retry Interval  s

Maximum Retry Interval  s

M ☐ On ☒ Off

O ☒ On ☐ Off

Prefix Delegate Type

[Apply](#) [Cancel](#)

- Configure the [RA](#) service parameters. [Table 6-11](#) lists the RA service parameters.

**Table 6-11 Parameter Descriptions for the RA Service**

Parameter	Description
RA Service	Click <b>On</b> to enable the function. Click <b>Off</b> to disable the function.
Specify MTU	If <b>On</b> button is selected, enter the MTU value.
MTU	Define the maximum transfer unit.
Preference	By default, the preference is Middle.
Minimum Retry Interval	The minimum time allowed between sending unsolicited multi-cast Router Advertisements from the interface. (The value must not be greater than $0.75 * (\text{Maximum Retry Interval})$ ).
Maximum Retry Interval	maximum time allowed between sending unsolicited multicast Router Advertisements from the interface.
M	Managed flag. Select this check box to enable the connected devices to obtain the IPv6 address through DHCP IPv6.

Parameter	Description
O	Other configure flag. Select this check box to enable the connected devices to obtain DNS address through DHCP IPv6.
Prefix Delegate Type	Option: <ul style="list-style-type: none"> <li>● Auto: All the available prefixes will be delegated.</li> <li>● Manual: One or more prefixes selected manually from all the static prefixes configured before will be delegated.</li> </ul>

3. Click **Apply** button to apply the changes.

### Port Control

1. Click **Port Control** to the configuration page, see [Figure 6-16](#).

**Figure 6-16 Port Control Page**

#### ▼ Port Control

Interface	DHCPv6	RA
LAN1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LAN2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LAN3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LAN4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SSID8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

All On | All Off

Apply Cancel

2. Select the LAN interface or SSID on which you want to disable or enable the DHCPv6 and RA function.



#### Note

- Click **All On** to select all IPv6 Service-Port control types.
- Click **All Off** to cancel all IPv6 Service-Port control types.

3. Click **Apply** button to apply the changes.

## 6.4 Configure the Route

### 6.4.1 Configure the Routing(IPv4)

The section describes how to configure routing(IPv4), which provides the parameters of route(IPv4) configuration features.

The relevant information of Internet status includes **Routing Table**, **Static Routing** and **Policy Routing**.

#### Prerequisite

Before configuring routing(IPv4), make sure that the IPv4 WAN connection is created.

#### Steps

##### Check the Routing Table

1. On the main page of the ZXHN H1600, select **Local Network > Routing > IPv4** to the **Routing(IPv4)** page.
2. Click **Routing Table** to the configuration page, see [Figure 6-17](#).

**Figure 6-17 Routing Table Page**

▼ Routing Table

Network Address	Subnet Mask	Gateway	Interface
192.168.1.0	255.255.255.0	0.0.0.0	LAN
192.168.168.0	255.255.255.128	0.0.0.0	LAN
192.168.168.128	255.255.255.128	0.0.0.0	LAN

Refresh

3. Click **Refresh** to refresh the information.

##### Configure the Static Routing

1. Click **Static Routing** to the configuration page, see [Figure 6-18](#).

**Figure 6-18 Static Routing Page**

## ▼ Static Routing

[What should be noticed when configuring static routing?](#)

The screenshot shows a web interface for configuring static routing. At the top, there is a section titled 'Static Routing' with a dropdown arrow. Below it is a link 'What should be noticed when configuring static routing?'. The main part of the interface is a 'New Item' form. The form has a title bar with a dropdown arrow and a trash icon. The form contains the following fields: 'Name' (a text input), 'Egress' (a dropdown menu with 'Please select...' as the current selection), 'Network Address' (a four-part numeric input for an IPv4 address), 'Subnet Mask' (a four-part numeric input for a subnet mask), and 'Gateway' (a four-part numeric input for a gateway address). At the bottom right of the form are two buttons: 'Apply' and 'Cancel'. At the bottom left of the form is a '+ Create New Item' button.

2. Configure the static routing parameters. [Table 6-12](#) lists the static routing parameters.

**Table 6-12 Parameter Descriptions for the Static Routing**

Parameter	Description
Name	The name of static routing entry.
Egress	WAN connection for static routing.
Network Address	IPv4 address of the destination network.
Subnet Mask	Subnet mask of the destination network.
Gateway	The next-hop IPv4 address to the destination network.

3. Click **Apply** button to apply the changes.


**Configure the Policy Routing**

1. Click **Policy Routing** to the configuration page, see [Figure 6-19](#).

**Figure 6-19 Policy Routing Page**

▼ Policy Routing

---

▼ New Item 

Name

Egress Please select... ▼

Source IP Address

Source Mask



Destination IP Address


Destination Mask

Protocol Any ▼

Source MAC Address

Select from the associated devices

 Create New Item

2. Configure the policy routing parameters. [Table 6-13](#) lists the policy routing parameters.

**Table 6-13 Parameter Descriptions for the Policy Routing**

Parameter	Description
Name	The name of Policy routing entry.
Egress	WAN connection for policy routing
Source IP Address	Source IPv4 address of the matching packets.
Source Mask	Source mask of the matching packets.
Destination IP Address	Destination IPv4 address of the matching packets.
Destination Mask	Destination mask of the matching packets.
Protocol	Matching IPv4 protocol. The ANY option means any IPv4 protocol.
Source Port	Source port number of the matching packets.
Destination Port	Destination port number of the matching packets.
Source MAC Address	MAC address of the source device that sends the matching packets.

3. Click **Apply** button to apply the changes.

## 6.4.2 Configure the Routing(IPv6)

The section describes how to configure Routing(IPv6).

The relevant information of Internet status includes **Routing Table**, **Static Routing** and **Policy Routing**.

### Prerequisite

Before configuring routing(IPv6), make sure that the IPv6 WAN connection is created.

### Steps

#### Check the Routing Table

1. On the main page of the ZXHN H1600, select **Local Network > Routing > IPv6** to the **Routing(IPv6)** page.
2. Click **Routing Table** to the configuration page, see [Figure 6-20](#).

**Figure 6-20 Routing Table Page**

#### ▼ Routing Table

Prefix	Gateway	Interface
fe80::219:c6ff:fe50:7180/128	::	LAN
fe80::/64	::	LAN

Refresh

3. Click **Refresh** to refresh the information.


#### Configure the Static Routing

1. Click **Static Routing** to the configuration page, see [Figure 6-21](#).

**Figure 6-21 Static Routing(IPv6) Page**

#### ▼ Static Routing

[What should be noticed when configuring static routing?](#)

▼ New Item 

Name

Egress

Please select... ▼


Prefix

/

Gateway

Apply

Cancel

 Create New Item

2. Configure the static routing parameters. [Table 6-14](#) lists the static routing parameters.

**Table 6-14 Parameter Descriptions for the Static Routing**

Parameter	Description
Name	The name of static routing entry.
Egress	WAN connection for static routing.
Prefix	IPv6 address and prefix length. The value range is 1-128.
Gateway	The next-hop IP address to the destination network.

3. Click **Apply** button to apply the changes.

### Configure the Policy Routing

1. Click **Policy Routing** to the configuration page, see [Figure 6-22](#).

**Figure 6-22 Policy Routing(IPv6) Page**

▼ Policy Routing

▼ New Item

Name

Egress

Please select... ▼

Source IP Address

 / 128

Destination IP Address

 / 128

Protocol

Any ▼

Source MAC Address

:  :  :  :  :

Select from the associated devices

Apply

Cancel

+

 Create New Item

2. Configure the policy routing parameters. [Table 6-15](#) lists the policy routing parameters.

**Table 6-15 Parameter Descriptions for the Policy Routing**

Parameter	Description
Name	The name of Policy routing entry.
Egress	WAN connection for policy routing
Source IP Address	Source IPv6 address of the matching packets.
Destination IP Address	Destination IPv6 address of the matching packets.
Protocol	Matching IPv6 protocol. The ANY option means any IPv6 protocol.

Parameter	Description
Source Port	Source port number of the matching packets.
Destination Port	Destination port number of the matching packets.
Source MAC Address	MAC address of the source device that sends the matching packets.

3. Click **Apply** button to apply the changes.

## 6.5 Configure the FTP

The section describes how to configure [FTP](#). **FTP** provides the parameters of FTP configuration features.

### Prerequisite

Before configuring FTP application, make sure a USB storage device is connected to open the ZXHN H1600 device.

### Steps

1. On the main page of the ZXHN H1600, select **Local Network > FTP** to open the FTP page, see [Figure 6-23](#).

**Figure 6-23 FTP**

▼ FTP

Server

☐ On ☒ Off

Username

admin

Password

\*\*\*\*\*

Apply

Cancel

2. [Table 6-16](#) lists the FTP parameters.

**Table 6-16 FTP parameters**

Parameter	Description
Server	Click <b>On</b> to enable the FTP server function. Click <b>Off</b> to disable the FTP server function.
Username/Password	It is valid only if the FTP security function is enabled.

3. Click **Apply** button to apply the changes.



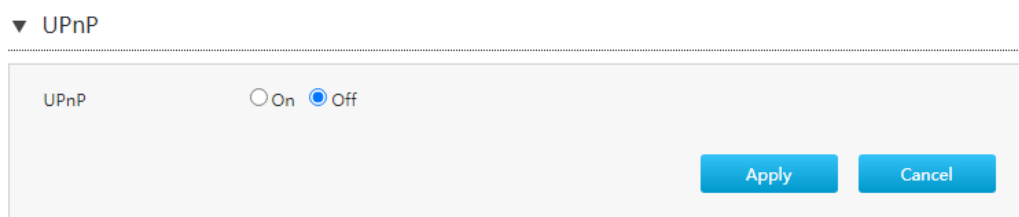
## 6.6 Configure the UPnP

The procedure provides the parameters of **UPnP** configuration features.

### Steps

1. On the main page of the ZXHN H1600, select **Local Network > UPnP** to open the **UPnP** page, see [Figure 6-24](#).

**Figure 6-24 UPnP**



[Table 6-17](#) lists the UPnP parameters.

**Table 6-17 UPnP parameters**

Parameter	Description
UPnP	Click <b>On</b> to enable the UPnP function. Click <b>Off</b> to disable the UPnP function.

2. Click **Apply** button to apply the changes.

## 6.7 Configure the DMS/DLNA

The section describes how to configure **DMS**. **DMS** provides the parameters of DMS configuration features.

DMS is a multimedia server defined in **DLNA** protocol, which uses **UPnP** protocol to search and categorize the local media files or photos, and provide **VOD** services for the **DMP**.

If the DMS function is enabled on the ZXHN H1600 device, any client that supports UPnP function can use the specified DMP (for example, windows media player) to watch the media files or photos stored in the USB storage device.

The version of the windows media player used for DMS function must be 11 or later, or the **OS** must be vista or Win 7. To enable the DMP function in OS of earlier version, special tools, such as Intel(R) Tool for UPnP(TM) Technology or Twonky Media Manager must be installed.

### Prerequisite

The USB device is connected to open the ZXHN H1600 device.

### Steps

1. On the main page of the ZXHN H1600, select **Local Network > DMS/DLNA** to open the **DMS/DLNA** page, see [Figure 6-25](#).

**Figure 6-25 DMS/DLNA**

#### ▼ DMS/DLNA

2. Enable the DMS/DLNA function, and specify the path storing the media files. For a description of the parameters, refer to [Table 6-18](#).

**Table 6-18 Parameter Descriptions for the DMS/DLNA**

Parameter	Description
DMS	Click <b>On</b> to enable the DMS function. Click <b>Off</b> to disable the DMS function.
DMS Name	To create a DMS, enter the name of the DMS.
Library Rescan Method	Library rescan method that the device supports. Normally, it is set to Auto.
Media Source1– Media Source4	By default, the media source is <i>/mnt</i> , that is the root directory of the USB device. You can change the root directory to other directory of the USB storage device.

3. Click **Apply** button to apply the changes.

## 6.8 Configure the Samba Service

The procedure provides the parameters of samba configuration features.

### Steps

1. On the main page of the ZXHN H1600, select **Local Network > Samba Service** to open the **Samba Service** page, see [Figure 6-26](#).

**Figure 6-26 Samba Service**

▼ Samba Service

Samba Service

☐ On  
☒ Off  
☐ Auto On After Detecting USB Storage Plugged

Host Name

smbshare

Anonymous

☐ On ☒ Off

Samba Username

samba

Samba Password

\*\*\*\*\*

Apply

Cancel

Table 6-19 lists the samba service parameters.

2. **Table 6-19 Samba Service parameters**

Parameter	Description
Samba Service	Click <b>On</b> to enable the samba service function manually. Click <b>Off</b> to disable the samba service function. Click <b>Auto On After Detecting USB Storage Plugged</b> : If detecting USB Storage Plugged, it will enable the samba service function automatically.
Host Name	The name of samba host.
Anonymous	Click <b>On</b> to enable the anonymous function. Click <b>Off</b> to disable the anonymous function.
Samba Username/Samba Password	It is valid only if <b>Anonymous</b> is disabled.

3. Click **Apply** button to apply the changes.

## 6.9 Configure the DNS

The section describes how to configure **DNS**. **DNS** provides the parameters of DNS configuration features.

The relevant information of Internet status includes **Domain name** and **Host Name**.

### Steps

#### Configure the domain name

1. On the main page of the ZXHN H1600, select **Local Network > DNS** to open the **Domain name** page, see [Figure 6-27](#).

**Figure 6-27 Domain name**

▼ Domain Name

---

Domain Name

Apply

Cancel

2. Type the domain name in the text box.
3. Click **Apply** button to apply the changes.

### Configure the host name

1. Click **Host name** to open the **Host Name** page, see [Figure 6-28](#).

**Figure 6-28 Host Name**

▼ Host Name

---

▼ New Item

Host Name

IP Address

Apply

Cancel

+ Create New Item

2. Type the host name in the **Host Name** text box and the IP address in the **IP Address** text box.
3. Click **Apply** button to apply the changes.

## 6.10 Configure the Device Role

The section describes how to configure the device role in the mesh network.

- Controller: set the device as the main control AP in the mesh network and connects the LAN interface of the optical cat.
- Agent: set the device as subordinate AP in the mesh network to connect the WAN interface of the main control AP.

### Steps

1. On the main page of the ZXHN H1600, select **Local Network > NetSphere** to the **NetSphere** page, see [Figure 6-29](#).

Figure 6-29 NetSphere page

▼ Global Configuration

Enable

☒ On ☐ Off

Apply

Cancel

2. Set the device role in the mesh network. For a description of the parameters, refer to [Table 6-20](#).

Table 6-20 Parameter Descriptions for the NetSphere

Parameter	Description
Enable	Click <b>On</b> button to enable the multi-AP networking function. Click <b>Off</b> button, the device is used as a common wireless router.

3. Click **Apply** button to apply the changes.

# Chapter 7

## Configure the VoIP

### Table of Contents

Check the Status of VoIP.....	7-1
Configure the SIP Accounts.....	7-2
Configure the Advanced Parameters.....	7-2
Configure the SIP Protocol.....	7-4
Configure the Media.....	7-5
Configure the Fax.....	7-6

## 7.1 Check the Status of VoIP

This procedure shows the relevant information of **VoIP** status.

### Steps

1. On the main page of the ZXHN H1600 device, select **VoIP > Status** to open the **Status** page, see [Figure 7-1](#).

**Figure 7-1 VoIP Status Page**

#### ▼ VoIP Line Status

Line ID	Number	Status
Line1		Inactive
Line2		Inactive

Refresh

#### ▼ VoIP Phone Status

	Phone ID	Status
☎	Phone1	Idle
☎	Phone2	Idle

Refresh

2. Click **Refresh** to refresh the information.

## 7.2 Configure the SIP Accounts

This procedure describes how to configure basic parameters of the VoIP service, including sip account, authorization username, password.

### Steps

1. On the main page of the ZXHN H1600 device, select **VoIP > Basic** to open the **SIP Accounts** page, see [Figure 7-2](#).

**Figure 7-2 SIP Accounts Page**

▼ SIP Account-1

[How to get VoIP authentication information?](#)

SIP Account

Authorization Username

Password

2. Set the parameters. [Table 7-1](#) describes the SIP account parameters .

**Table 7-1 Description of the SIP Account Parameters**

Parameter	Description
SIP Account	Registered name of a SIP subscriber. Normally, it is the phone number of the subscriber.
Authorization User-name	Username for authentication by the SS system, which must be the same as that configured in the SS system.
Password	Password for VoIP service authentication by the SS system, which must be the same as that configured in the SS system.

3. Click **Apply** button to apply the changes.

## 7.3 Configure the Advanced Parameters

This procedure describes how to configure advanced parameters of the VoIP service, including echo cancellation, jitter buffer, and [DTMF](#).

### Steps

#### **Configure the Advanced Parameters.**

1. On the main page of the ZXHN H1600 device, select **VoIP > Advanced**. The **Advanced** page is displayed, see [Figure 7-3](#).

**Figure 7-3 Advanced Parameters Page**

▼ Advanced Parameters

DTMF	<input type="text" value="RFC2833"/>	▼
Jitter Buffer	<input type="text" value="Adaptive"/>	▼
Minimum	<input type="text" value="20"/>	ms
Maximum	<input type="text" value="200"/>	ms

- Set the parameters. For a description of the parameters, refer to [Table 7-2](#).

**Table 7-2 Parameter Descriptions for the VoIP Service**

Parameter	Description
DTMF	DTMF mode. Options: <ul style="list-style-type: none"> <li>● <b>RFC2833</b>: DTMF digits are carried by RTP streams.</li> <li>● <b>DTMF in Voice</b>: DTMF digits are not processed.</li> <li>● <b>SIP Info</b></li> </ul>
Jitter Buffer	The variation in packet delay is called jitter. Jitter buffer refers to intentional delay of packets. Options: <ul style="list-style-type: none"> <li>● <b>Fixed</b>: A fixed buffer time must be specified.</li> <li>● <b>Adaptive</b>: A jitter range must be specified.</li> </ul>
Minimum	Minimum value of the jitter range, default: 20 ms.
Maximum	Maximum value of the jitter range, default: 200 ms.

- Click **Apply** button to apply the changes.
- On the main page of the ZXHN H1600 device, select **VoIP > Advanced > Echo Cancellation**. The **Echo Cancellation** page is displayed, see [Figure 7-3](#).

**Figure 7-4 Echo Cancellation Page**

▼ Echo Cancellation

▼ Line-1

Echo Cancellation ☒ On ☐ Off

▶ Line-2

- Set the parameters. For a description of the parameters, refer to [Table 7-2](#).



**Table 7-3 Parameter Descriptions for the Echo Cancellation**

Parameter	Description
Echo Cancellation	Whether to disable the echo cancellation feature.

- Click **Apply** button to apply the changes.

## 7.4 Configure the SIP Protocol

This procedure describes how to configure the SIP Protocol.

### Steps

- On the main page of the ZXHN H1600 device, select **VoIP > SIP Protocol** to the **SIP Protocol** page, see [Figure 7-5](#).

**Figure 7-5 SIP Protocol Page**

#### ▼ SIP Protocol

Local Port	5060
Primary Proxy Server	0.0.0.0
Primary Outbound Proxy Server	0.0.0.0
Primary Proxy Port	5060
Secondary Proxy Server	0.0.0.0
Secondary Outbound Proxy Server	0.0.0.0
Secondary Proxy Port	5060
Register Expires	3600 s
Unregister on Reboot	<input type="radio"/> On <input checked="" type="radio"/> Off
Link Test	<input type="radio"/> On <input checked="" type="radio"/> Off
Link Test Interval	20 s

- Set the parameters. [Table 7-4](#) describes the SIP protocol parameters.

**Table 7-4 Description of the SIP Protocol Parameters**

Parameter	Description
Local Port	Local port that the SIP protocol uses, default: 5060.
Primary Proxy Server	IP address of the active SIP proxy server that the ISP provides, which must be the same as that configured on the SIP server.
Primary Outbound Proxy Server	IP address of the active outbound proxy server that the ISP provides, which must be the same as that configured on the SIP server.

Parameter	Description
Primary Proxy Port	Port number that the ISP provides for communication between the active server and VoIP terminals, which must be the same as that configured on the SIP server, default: 5060.
Secondary Proxy Server	IP address of the standby SIP proxy server that the ISP provides, which must be the same as that configured on the SIP server.
Secondary Outbound Proxy Server	IP address of the standby outbound proxy server that the ISP provides, which must be the same as that configured on the SIP server.
Secondary Proxy Port	Port number that the ISP provides for communication between the standby server and VoIP terminals, which must be the same as that configured on the SIP server, default: 5060.
Register Expires	Registered lifecycle, unit: seconds, default: 3600.
Unregister On Reboot	Whether to deregister VoIP terminals after the server is restarted.
Link Test	Whether to enable link tests.
Link Test Interval	Interval of link tests, default: 20 seconds.

- Click **Apply** button to apply the changes.

## 7.5 Configure the Media

This procedure describes how to configure the media codec type.

### Steps

- On the main page of the ZXHN H1600 device, select **VoIP > Media** to the **Media** page, see [Figure 7-6](#).

**Figure 7-6 Media Page**

▼ Phone-1

Codec	VAD	Codec Priority
<input checked="" type="checkbox"/> G722	<input type="checkbox"/> VAD	3
<input checked="" type="checkbox"/> G711U	<input type="checkbox"/> VAD	2
<input checked="" type="checkbox"/> G711A	<input type="checkbox"/> VAD	1
<input checked="" type="checkbox"/> G729	<input type="checkbox"/> VAD	4
<input checked="" type="checkbox"/> G726	<input type="checkbox"/> VAD	5
<input checked="" type="checkbox"/> G723	<input type="checkbox"/> VAD	6

- Configure the media parameters. [Table 7-5](#) describes the media parameters.

**Table 7-5 Description of the Media Parameters**

Parameter	Description
G722, G711U, G711A, G729, G726, G723	Select a codec, which must be the same as that configured in the SoftSwitch system.
VAD	Select a codec, which must be the same as that configured in the SoftSwitch system.
Codec Priority	You can modify priority through this parameter. A lower number indicates a higher priority.

3. Click **Apply** button to apply the changes.

## 7.6 Configure the Fax

The ZXHN H1600 supports the T30 and T38-based fax feature. By default, the T38 protocol is used.

### Steps

1. On the main page of the ZXHN H1600 device, select **VoIP > Fax**. The **Fax** page is displayed, see [Figure 7-7](#).

**Figure 7-7 Fax Page**

▼ FAX

The screenshot shows a configuration page for 'FAX'. Under the 'VP1' section, there is a 'T38 Protocol' toggle switch. The 'On' radio button is selected, and the 'Off' radio button is unselected. At the bottom right of the configuration area, there are two buttons: 'Apply' and 'Cancel'.

2. Set the parameters. For a description of the parameters, refer to [Table 7-6](#).

**Table 7-6 Parameter Descriptions for the Fax**

Parameter	Description
Enable T38 Protocol	Whether to enable the T38 protocol. If the <b>Off</b> button is selected, the T30 protocol is used.

3. Click **Apply** button to apply the changes

# Chapter 8

## Configure the Management and Diagnosis

---

### Table of Contents

Configure the Account Management.....	8-1
Configure the Login Timeout.....	8-3
Configure the System Management.....	8-3
Configure the Mirror function.....	8-6
Configure the TR069 function.....	8-7
Manage the Log.....	8-9
Diagnosis.....	8-12
Check the ARP Table.....	8-14
Check the MAC Table.....	8-14
Configure the IPv6 Switch.....	8-15

## 8.1 Configure the Account Management

This procedure introduces how to manage the user accounts and rights.

### Steps

#### Guest Account Management

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > Account Management** to the **Admin Account Management** page, see [Figure 8-1](#).

**Figure 8-1 Admin Account Management Page**

## ▼ Admin Account Management

Username

Old Password

New Password

Confirmed Password

2. Configure the administrator account management parameters.

[Table 8-1](#) lists the administrator account management parameters.

**Table 8-1 Parameter Descriptions for the Administrator Account Management**

Parameter	Description
Username	The user name for the administrator privilege. The default user name of the administrator privilege is <i>admin</i> , which cannot be modified.
Old Password	The default passwords for the Administrator is admin.
New Password	Specify the new password.
Confirmed Password	Confirm the new password.

3. Click **Apply** button to apply the changes.

**User Account Management**

1. On the main page of the ZXHN H1600, select **Management > Account Management** to the **User Account Management** page, see [Figure 8-2](#).

**Figure 8-2 User Account Management Page**

## ▼ User Account Management

Username

New Password

Confirmed Password

2. Configure the administrator account management parameters.

[Table 8-2](#) lists the user account management parameters.

**Table 8-2 Parameter Descriptions for the User Account Management**

Parameter	Description
Username	The user name for the administrator privilege. The default user name of the administrator privilege is <i>vul-admin</i> , which can be modified.
New Password	Specify the new password.
Confirmed Password	Confirm the new password.

3. Click **Apply** button to apply the changes.

## 8.2 Configure the Login Timeout

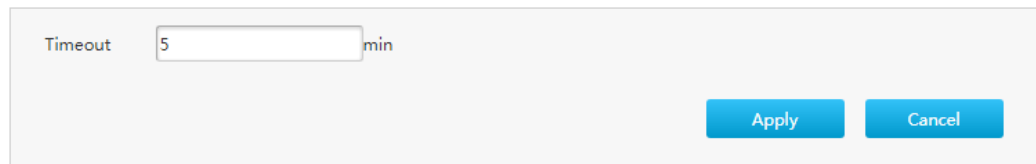
This procedure introduces how to configure the login timeout.

### Steps

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > Idle Timeout** to the **Idle Timeout** page, see [Figure 8-3](#).

**Figure 8-3 Idle Timeout Configuration Page**

▼ Idle Timeout



2. Specify the time in the **Timeout** text box, rang: 1-30 min.If no operation is performed on the Web page during this period, the system automatically exits the login status.
3. Click **Apply** button to apply the changes.

## 8.3 Configure the System Management

### 8.3.1 Configure the Device Management

This procedure introduces how to reboot the device or restore the factory default settings.

### Steps

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > System Management > Device Management** to the **Device Management** page, see [Figure 8-4](#).

**Figure 8-4 Device Management Page****▼ Reboot Management**

Reboot: Please click the "Reboot" button to reboot the device. This process will take about 5 minutes.

Note: The reboot operation will interrupt all current interactions.

Reboot

**▼ Factory Reset Management**

Factory Reset: All the parameters will be restored to their default settings. The device will reboot automatically at the end of this process.

Note: After this operation is finished, all user configured settings will be lost and the device default settings will be restored.

Factory Reset

2. On this page, you can perform the following operations:
  - Click **Reboot** to reboot the ZXHN H1600 device.
  - Click **Factory Reset** to restore the factory default settings.

## 8.3.2 Upgrade Software

This procedure introduces how to upgrade Software.


### Prerequisite

Make sure that the upgrade file is ready.

### Steps

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > System Management > Software Upgrade** to the **Software Upgrade** page, see [Figure 8-5](#).

**Figure 8-5 Software Upgrading Page****▼ Software Upgrade**

 The device will reboot after upgrading.

Please select a software version file:

Upgrade

2. Click **Browse** to select the upgrade version file.

3. Click **Upgrade**.

**Note**

The system prompts the upgrade progress. During the upgrade process, do not cut off the power supply. Otherwise, the device may be damaged.

Generally, the software is upgraded by the ZTE CORPORATION engineers. If the user wants to upgrade the firmware, contact the local office of ZTE CORPORATION to obtain the latest firmware version.

### 8.3.3 Manage the User Configuration

This procedure introduces how to import or export the user configuration file.

User configuration refers to the customized configuration based on the factory defaults.

The user can configure the device settings based on his own requirements, and the configuration can be backed up.

#### Steps

##### Backup User Configuration

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > System Management > User Configuration Management** to the **Backup User Configuration** page, see [Figure 8-6](#).

**Figure 8-6 Backup User Configuration Page**

▼ Backup User Configuration

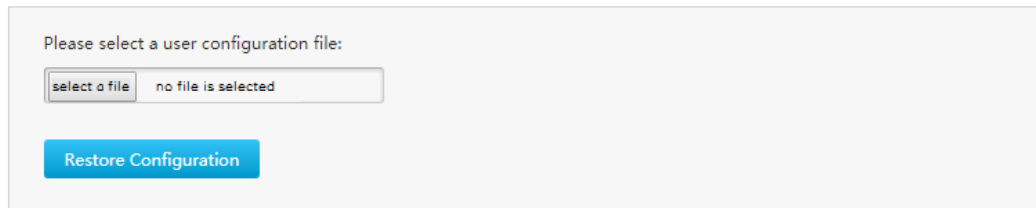


2. Click **Backup Configuration** to export the user configuration file.

##### Restore User Configuration

1. Click **Restore User Configuration** to the configuration page, see [Figure 8-7](#).



**Figure 8-7 Restore Configuration Management Page****▼ Restore User Configuration**

2. Click **Browse** to select the user configuration file, and then click **Restore Configuration** to restore the device to the user configuration.

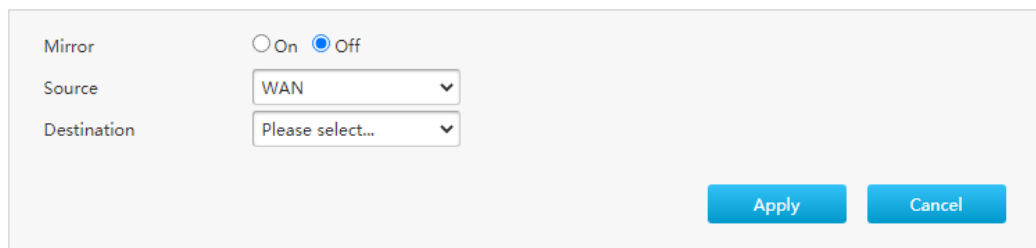
## 8.4 Configure the Mirror function

This procedure introduces how to perform the mirror configuration.

If the mirror configuration is performed, the packets at the WAN side will be copied to the specified LAN interface, and it can be used for the network analysis and troubleshooting.

**Steps**

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > Mirror Configuration** to the **Mirror Configuration** page, see [Figure 8-8](#).

**Figure 8-8 Mirror Configuration Page****▼ Mirror Configuration**

2. Configure the mirror configuration parameters.  
[Table 8-3](#) lists the user mirror configuration parameters.

**Table 8-3 Parameter Descriptions for the Mirror Configuration**

Parameter	Description
Mirror	Click <b>On</b> to enable the mirror function. Click <b>Off</b> to disable the mirror function.
Source	Network-side WAN interface.
Destination	User-side LAN interface.

3. Click **Apply** button to apply the changes.

## 8.5 Configure the TR069 function

The section describes how to configure the TR-069. TR-069 provides the parameters of the TR-069 configuration features.

### Steps

#### Configure the basic parameters

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > TR-069** to the **TR-069** page.
2. Click **Basic Configuration** to the TR069 basic configuration page, see [Figure 8-9](#).

**Figure 8-9 Basic Configuration Page**

▼ Basic Configuration

ACS URL	<input type="text" value="http://0.0.0.0:9090/digest/tr069"/>
Username	<input type="text" value="hgw"/>
Password	<input type="password" value="*****"/>
Connection Request URL	<input type="text" value="http://0.0.0.0"/>
Connection Request Username	<input type="text" value="ACS"/>
Connection Request Password	<input type="password" value="*****"/>
Periodic Inform	<input checked="" type="radio"/> On <input type="radio"/> Off
Periodic Inform Interval	<input type="text" value="43200"/> s
Authenticating ACS	<input type="radio"/> On <input checked="" type="radio"/> Off

3. Configure the TR069 basic configuration parameters.

[Table 8-4](#) lists the TR069 Basic Configuration parameters.

**Table 8-4 Parameter Descriptions for the TR069 Basic Configuration**

Parameter	Description
ACS URL	The URL of the automatic configuration server that manages the device.
Username/Password	User name and password for the ZXHN H1600 to log in to the automatic configuration server.
Connection Request URL	Connection request URL, which is automatically generated by the system.
Connection Request Username/ Connection Request Password	User name and password for the TR-069 connection authentication that the automatic configuration server provides when it logs in to the ZXHN H1600 device.

Parameter	Description
Periodic Inform	Enable the periodic inform function.
Periodic Inform Interval	Periodic inform interval of the device (unit: second).
Authenticating ACS	Enable the TR-069 authenticating ACS.
ACS CA Certificate Chain	<ul style="list-style-type: none"> <li>● Auto: Automatically select the first chain certificate authentication or the second chain certificate authentication</li> <li>● Chain1: The first chain certificate authentication</li> <li>● Chain2: The second chain certificate authentication</li> </ul>

- Click **Apply** button to apply the changes.

### Configure the STUN

- Click **STUN Configuration** to the STUN configuration page, see [Figure 8-10](#).

**Figure 8-10 STUN Configuration**

#### ▼ STUN Configuration

Enable ☐ On ☒ Off

Server Address

**Apply** **Cancel**

- Configure the STUN configuration parameters. [Table 8-5](#) lists the STUN configuration parameters.

**Table 8-5 Parameter Descriptions for the STUN Configuration**

Parameter	Description
Enable	After the STUN function is enabled, clients after NAT (or multiple NAT) can find their public network addresses, and determine the type of NAT and the Internet port bound to the local port. These information is used to create UDP communication between two hosts after the NAT router.
Server Address	The address of the server

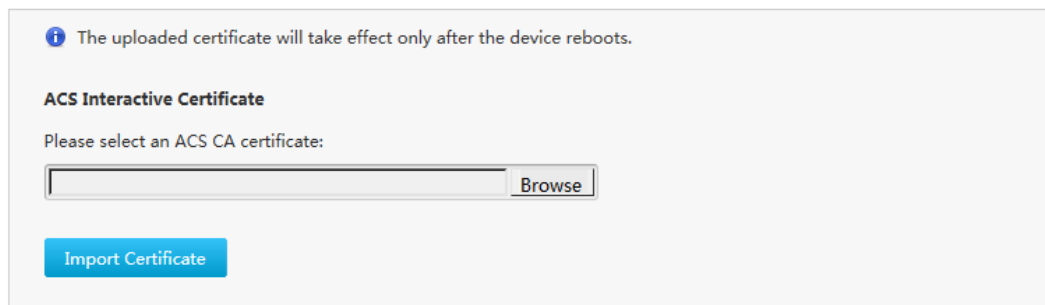
- Click **Apply** button to apply the changes.

### Configure the Certificate

- Click **Certificate Management** to the certificate management page, see [Figure 8-11](#).

**Figure 8-11 Certificate Management**

## ▼ Certificate Management



2. Select a ACS CA certificate chain.
3. Click **Browse** to select an ACS CA certificate, and click **Import Certificate**.

## 8.6 Manage the Log

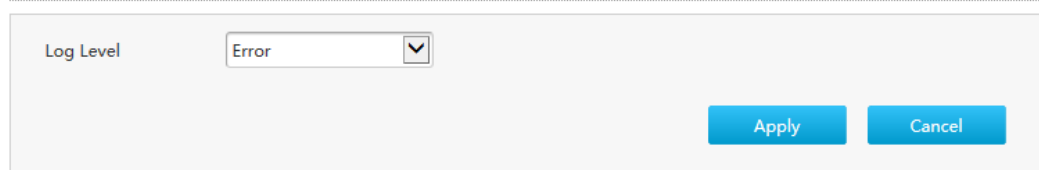
The log management function enables the log printing function and configures the level of output logs.

**Steps****Configure the Log Level**

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > Log Management** to the **Log Management** page.
2. Click **Log Level Management** to the log level management page, see [Figure 8-12](#).

**Figure 8-12 Log Level Management Page**

## ▼ Log Level Management



3. Configure the log management parameters.  
[Table 8-6](#) lists the Log Management parameters.

**Table 8-6 Parameter Descriptions for the Log Level Management**

Parameter	Description
Log Level	Options (ranked from low to high): <ul style="list-style-type: none"><li>● Debug</li><li>● Informational</li><li>● Notice</li><li>● Warning</li></ul>

Parameter	Description
	<ul style="list-style-type: none"> <li>● Error</li> <li>● Critical</li> <li>● Alert</li> <li>● Emergency</li> </ul> <p>The system stores only the logs of the selected level and above levels.</p>

- Click **Apply** button to apply the changes.

### Configure the System Log

- Click **System Log Management** to the system log management page, see [Figure 8-13](#).

**Figure 8-13 System Log Management Page**

#### ▼ System Log Management

Save Log ☐ On ☒ Off

Apply Cancel

Log Output

Refresh Download Log

- Configure the system log management parameters.  
[Table 8-7](#) lists the system log management parameters.

**Table 8-7 Parameter Descriptions for the System Log Management**

Parameter	Description
Save Log	Click On to enable the system log function.

- Click **Apply** button to apply the changes.
- (Optional) Click **Refresh** button to get the latest information.
- (Optional) Click **Clear** to clear the logs.
- (Optional) Click **Download Log** to download the log file from the log server.

### Configure the Security Log

1. Click **Security Log Management** to the security log management page, see [Figure 8-14](#).

**Figure 8-14 Security Log Management Page**

▼ Security Log Management

---

Save Log      ☐ On ☒ Off

Log Output

2. Configure the security log management parameters.  
[Table 8-8](#) lists the security log management parameters.

**Table 8-8 Parameter Descriptions for the security Log Management**

Parameter	Description
Save Log	Click <b>On</b> to enable the security log function.

3. Click **Apply** button to apply the changes.
4. (Optional) Click **Refresh** button to get the latest information.
5. (Optional) Click **Download Log** to download the log file from the log server.

### Configure the Remote Log

1. Click **Remote Log Management** to the remote log management page, see [Figure 8-15](#).

**Figure 8-15 Remote Log Management Page**

▼ Remote Log Management

---

Remote Log      ☐ On ☒ Off

2. Configure the remote log management parameters.

[Table 8-9](#) lists the remote log management parameters.

**Table 8-9 Parameter Descriptions for the Remote Log Management**

Parameter	Description
Remote Log	Click <b>On</b> to enable the remote log function.

3. Click **Apply** button to apply the changes.

## 8.7 Diagnosis

### Abstract

The procedure describes how to diagnosis. **Diagnosis** provides the parameters of the diagnosis configuration features.

The relevant **Diagnosis** includes **Ping Diagnosis**, **Trace Route Diagnosis**, and **DSL Line Diagnosis**.

### Steps

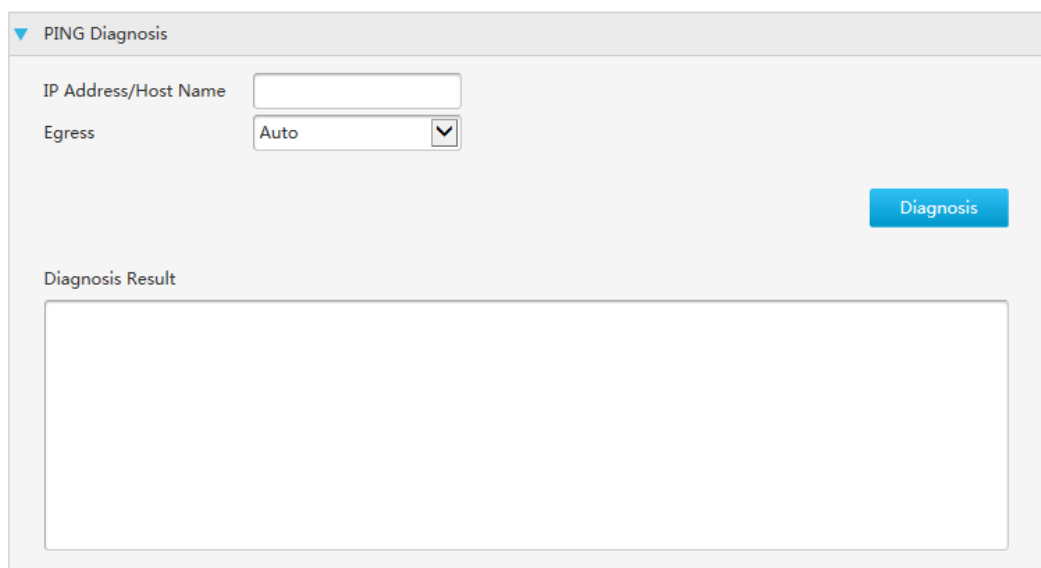
#### Configure the Ping Diagnosis

1. On the main page of the ZXHN H1600 device , select **Management & Diagnosis > Diagnosis** to open the **Ping Diagnosis** page, see [Figure 8-16](#).

**Figure 8-16 Ping Diagnosis**

#### ▼ Network Diagnosis

[What should be noticed when diagnosing?](#)



2. Type the host IP address or host name in the **IP Address/Host Name** text box, select the WAN/LAN connection from the **Egress** drop-down list.
3. Click **Diagnosis** to diagnose the connection, and the system will display the following diagnosis results.

### Configure the Trace Route Diagnosis

1. On the main page of the ZXHN H1600 device, select **Management & Diagnosis > Diagnosis** to open the **Trace Route Diagnosis** page, see [Figure 8-17](#).

**Figure 8-17 Trace Route Diagnosis**

Trace Route Diagnosis

IP Address/Host Name

Egress

Maximum Hops

Wait Time  ms

Protocol

Diagnosis Result

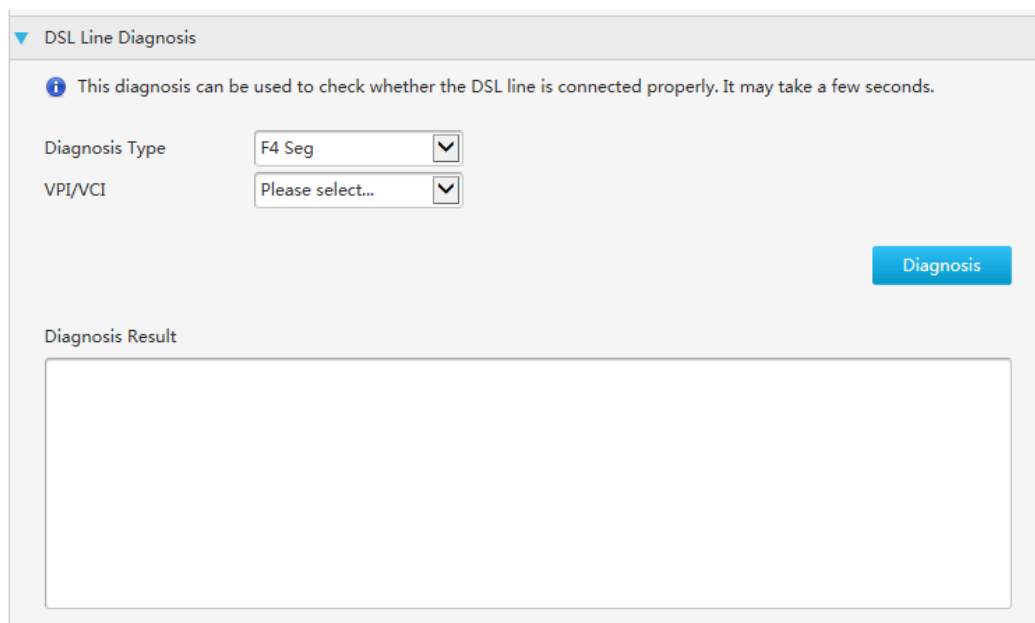
2. Type the IP address or host name in the **IP Address/Host Name** text box, select one **WAN connection**, specify the **Maximum Hops**, **Wait time**, and **Protocol**.
3. After the configuration, click **Diagnosis**.

### Configure the DSL Line Diagnosis

1. On the main page of the ZXHN H1600 device, select **Management & Diagnosis > Diagnosis** to open the **DSL line diagnosis** page, see [Figure 8-18](#).



Figure 8-18 DSL line diagnosis Page



DSL Line Diagnosis

*This diagnosis can be used to check whether the DSL line is connected properly. It may take a few seconds.*

Diagnosis Type: F4 Seg

VPI/VCI: Please select...

Diagnosis

Diagnosis Result

2. Select the Diagnosis Type and VPI/VCI.
3. Click **Diagnosis**. The result is displayed in the bottom box.

## 8.8 Check the ARP Table

Check the ARP address of the connected terminal device.

### Steps

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > ARP Table** to the **ARP Table** page, see [Figure 8-19](#).

Figure 8-19 ARP Table Page

▼ ARP Table

IP Address	MAC Address	Status	Interface
192.168.1.2	00:1e:90:3f:5c:39	Available	LAN

Refresh

2. Click **Refresh** button to refresh information.

## 8.9 Check the MAC Table

Check the MAC address of the connected terminal device.

### Steps

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > MAC Table** to the **MAC Table** page, see [Figure 8-20](#).

**Figure 8-20 MAC Table Page**

#### ▼ MAC Table

Interface	VLAN ID	MAC Address	Active Time(s)
SSID1	None	88:cb:87:31:42:8a	98.16

Refresh

2. Click **Refresh** button to refresh information.

## 8.10 Configure the IPv6 Switch

This procedure describes how to enable or disable IPv6 support for the ZXHN H1600.

### Steps

1. On the main page of the ZXHN H1600, select **Management&Diagnosis > IPv6 Switch** to the **IPv6 Switch** page, see [Figure 8-21](#).

**Figure 8-21 IPv6 Switch Page**

#### ▼ IPv6 Switch

- i** 1. IPv6 switch change will take effect only after the device reboots.  
2. Before changing IPv6 switch, please ensure that all configuration parameters about the related applications are set properly.

IPv6 Switch ☐ On ☒ Off  
IPv6 Status Off

Apply

Cancel

2. To disable IPv6 support, set IPv6 Function to **Off**, and click **Apply**.



#### Note

The configuration takes effective after the device is restarted.



# Chapter 9

## Troubleshooting

---

- **The Power indicator on the front panel is off after the power button is pressed.**
  - Power switch does not turn on.
  - The power adapter is not correctly connected to the device. Be sure to use the power adapter supplied with the device.
- **The green LAN indicator on the front panel is off after the device is powered on.**
  - The corresponding LAN link is not established.
  - The Ethernet cable is not correctly connected to the LAN interface.
  - The network device connected to the LAN interface is not powered on.
- **The Broadband indicator on the front panel is off after the device is powered on.**
  - The WAN link is not established.
  - The Ethernet cable is not correctly connected to the WAN interface.
  - Please contact the service provider for help.
- **Unable to connect to the network.**
  - Check that the Ethernet cable is correctly connected to the WAN interface and the Ethernet cable is correctly connected to the LAN interface.
  - Check that the WAN indicator on the front panel is on and the Internet indicator on the front panel is solid green or flashing green.
- **Restore the factory default settings.**

After the power is on, use a needle to press the button for over 5 seconds to restore the default factory settings.
- **Sometimes, the DSL users cannot access to the Internet normally.**

First check whether the ZXHN H1600 is in the normal state (Check the indicators according to this user manual). If yes, the computer or application network may be faulty. This is unrelated with DSL. If the ZXHN H1600 is abnormal, check the status of indicators one by one to remove the fault.

It is suggested to check the following items before seeking help from operators:

  1. The DSL telephone cable connectors are proper.

2. The DSL is away from the power cable and large-power electronic devices.
3. No telephone extensions and fax machines are connected between the DSL incoming line and splitter.
4. The splitter has been installed correctly.
5. The ZXHN H1600 has good heat dissipation ratio.

- **What are reasons for DSL synchronization failure (also referred as link down or link establishment failure)?**

If the DSL suddenly fails to be synchronized (link down) during application, usually the Link indicator on the ZXHN H1600 will not be On. It is suggested to check the following steps one by one:

1. First check the quality of incoming cables and incoming cable connectors.
2. Install the ZXHN H1600 correctly based on the user guidance. Minimize the number of taps.
3. Check whether the telephone cables and DSL are in good connection or whether the telephone cables are normal.
4. Try to disconnect the splitter and directly connect the ZXHN H1600 to the incoming user cable end. Ensure the problem is not due to improper installation or incoming user line quality. If the DSL can be synchronized again, it means that installation of the incoming user side is improper. Please re-install it according to the user guide.
5. If the DSL still fails to be synchronized when the ZXHN H1600 is connected to the incoming user cable end, contact the operators to check whether it is due to external line failure or ZXHN H1600 failure.
6. If the splitter problem is determined, call the operator for maintenance or replacement.
7. If the problem is due to the end office equipment failure, call the operator to confirm it.
8. Too long connection cable between the splitter and ZXHN H1600 may cause poor anti-interference performance and synchronization difficulty. Therefore, the connection cable should not be too long.